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CINNAMON OF CEYLON.

THE following interesting paper is specially contributed by Mr. PETER DE ABREW, of Colombo, a Fellow of the Imperial Institute :—

The island of Ceylon has always been noted for its cinnamon *(Laurus Cinnamomum)*, a spice which finds a ready market in Europe, especially in its southern countries, Spain and Italy. The South American Statos use it chiefly for incense, and other countries purchase it for chemical and confectionery purposes.

A species of cinnamon grows in the Malabar coast of India, Manill, Cochin China, Sumatra, Leeward Islands, Bourbon, Brazil, Arakan, and in some parts of Queensland, but the quality of the spice grown at those places is far inferior to that produced in this island of "spicy breezes," and its marketable value does not compare favorably with ours. Ceylon cinnamon was at one time a considerable source of revenue to the Government of the island, but now, owing to the lowness of the price, its value in this respect is comparatively small.

As far back as the time of Augustus Cæsar, the Romans had communication with India, and it is said that they traded largely in cinuamon obtained from Ceylon. A pound of it is recorded to have fetched as much as £8 at Rome. Its value now is about 7½d. per lb.

When the island was invaded by the Portuguese, the Sinhalese king, who lived not far from Colombo, paid an annual tribute of seven thousand pounds of cinnamon to the European invaders. There is no authentic record to show how the native monarchs caused the spice to be prepared, but it is known that they were very jealous of foreigners knowing the *modus operandi*. In 1602 the king of Kandy sent, as a present, some pepper and cinnamon to the king of Holland.

When the Dutch held sway here, they, knowing the value of the spice, paid much attention to the cultivation and production of it. Finding it to be more profitable than they expected, His Excellency Governor Falck in 1670, encouraged the industry and the systematic cultivation of cinnamon. His successors were much benefited by his labours; they reaped rich harvests before they eventually left the island, but did not pay any attention to the preservation of the shrubs.

When the British first occupied the island they found the gardens neglected, and His Excellency Sir Frederick North set about putting matters to rights and encouraged the development of the cultivation.

Cinnamon grows in both the low and the high districts of the island. In the former it thrives well in a loose sandy soil, and its quality is of a superior and more marketable grade than that found at higher elevations. As at present cultivated, it is not allowed to grow to more than the size of a shrub. The slender sticks, from which the bark is to be peeled to make the cinnamon of commerce, are cut down as soon as they reach a height of five or six feet.

There are records that pieces of furniture have been made from the wood of the full-grown cinnamon tree, but that must have been prior to the introduction of the prosent method of cultivation. The wood is white and light, and is used for fuel. It is questionable whether it would be suited to the making of furniture even if allowed to develop fully.

The leaf, when tender, is dark red or scarlet. As it matures it gets to be deep green. The blossom is a very pretty white one.

The fruit is somewhat like an acorn, but not so large. When ripe it used to be gathered up and put in nurseries for germination, but this is seldom done now. Says an old historian:—" . . . . .

" It is gathered by the natives for the purpose of "extracting oil from it. The process they employ "is to bruise the fruit, boil it, and skim off the oil. "This they uso for the hair and body on great

"occasions, and also for burning in their lamps "When mixed with coconut oil it gives an extremely "good light. The kings of Candy uso it for this "purpose, and formerly commanded their subjects "to bring them a certain quantity as a yearly "tributo. When any ambassadors are sent to these "princes they always burn this oil during tho time of "audience."

There are no records extant, nor information attainable indicating that either the Portuguese or Dutch conquerors manufactured any oil from the fruits. Neither during the early period of the British sway, nor now, is the process practised. Perhaps the mention of it h re may lead to some experiments in this line, which may ultimately result in a marketable oil.

The fruits are devoured by crows and other birds, and the propagation of the shrubs in their wild state is due to these birds, which swallow the berries, the kernels of which, uot dissolving iu their stomachs, are passed out uninjured.

The Sinhalese name for cinnamon is *Kurundu*, and it embraces the following different species—

1. *Pancy Kurundu* or Honey Cinnamon.
2. *Capuru* ,, ,, Camphor ,,
3. *Sevel* ,, ,, Soft ,,
4. *Dawul* ,, ,, Flat ,,
5. *Kimbul* ,, ,, Crocodile ,,
6. *Veli* ,, ,, Sandy ,,
7. *Nalu* ,, ,, Chippy ,,
8. *Kela* ,, ,, Wild ,,
9. *Pothu* ,, ,, Strippy ,,
10. *Mas* ,, ,, Fleshy ,,
11. *Nika* ,, ,, Long-leaved like *Nika*.

Each variety is characterised by some quality more or less closely related to the name applied to it.

During the time of the Dutch and the early British period, the Government monopolised the cinnamon trade, which monopoly was commonly known as the "*Mahabadda.*" Government paid every attention to the cinnamon department, as the produce then was the chief source of revenue. The gardens were well protected and responsible officers appointed to supervise the department. These officers were "sons of the soil" of distinguished birth, and were hold in the highest esteem by the Government. They had unlimited powers vested in them. Tho name of Rajapakse Maha Mudaliyar may be mentioned as one of them. J. H. C. makes the following reference to this distinguished chief in the *Saturday Magazine*, published in London in 1835. ". . . . When "the Dutch slave masters agreed to consider as free, "all the children of their slaves, this amiable person "not only followed their example, but was even anx- "ious to bestow immediate liberty upou all slaves "possessed either by himself or by any of his relatives. "He is extremely hospitable to Europeans, a man "of extensive information, and the best Sanskrit and "Pali scholar in the island. The print represents "Raja Paxa in the rich costume of his country, "attended by two servants bearing umbrellas. It is "copied from a picture kindly lent by Sir Alexander "Johnstone." It may also be mentioned here, that this noble chief was given a burial with British military honours, a mark of recognition which no other native gentleman had.

There are hardly any landmarks left now of the old cinnamon monopoly days. The "Walawwa" (residence of a chief) of the Maha Mudaliyar Rajapakse, and a store house of the department, are now rejuvenated and are residential bungalows. There are no traces of other buildings left.

Captain Percival, writing in 1805, refers to the "Maha Badda" as follows:—

"Each particular district where the cinnamon grows "is bound to furnish yearly a certain quantity of "cinnamon, proportioned to the number of villages "and inhabitants which it contains. Tho Cingalese, "in return for their services, have each a piece of "land allotted them, rent free. They are also ex- "empted from other government services, and enjoy "other privileges in proportion to tho quantity they "deliver. Those who are employed to bark the trees "are called 'schajalias' by the Dutch, and by us "'cholias.' Over them are placed officers of a supe- "rior class, whose business is to superintend the "workmen, to take charge of the woods, and to pre- "vent cattle and improper persons from trespassing "there. Besides these there is a set of officers of "a higher caste called cinnamon *Moodeliers*, whose "business is to judge and punish all small offences, "and to superintend the different districts and villages "where the cholias reside. Over the whole a head- "officer, usually known by the Portuguese name of "Captain *Cannaillè*, which means Captain Cinnamon. ". . . . . The chief Moodelier receives all the "reports concerning the woods and the cinnamon "affairs in general from the inferior officers and "transmits them to the Captain, who is accountable "only to the Governor."

With the depression in the market the department was abolished, and the grounds have been since sold. What was left as crown land is leased out, and gradually its area is also diminishing owing to Government land sales. There are, however, large private blocks still under cultivation, but it is feared that coconuts will replace the cinnamon before long.

There are two crops or seasons for the preparation of cinnamon, called the "Maha Mosama" and the "Kuda Mosama," or the big and the small season respectively. The "Maha Mosama" begins in May and ends in August, and the "Kuda Mosama" from the middle of October to about Christmas. During crop time the workmen go in gangs to the gardens and cut down the peelable sticks, which they easily find out from the colour of the leaves, or by making an incision on the bark of the tree. The knife used for cutting the sticks is called the "kettha." As the cutters go on from bush to bush, cutting down the sticks and putting them on the ground, another gang of men gather them into bundles and carry them on their shoulders to the "waduja" or peeling shed, erected on a central site. When a sufficient quantity of sticks has been cut down and brought to the shed the cutters return, and after the noontide meal they begin peeling operations.

Seated on the ground with outstretched bare legs, which serve as a support for the sticks, they peel the bark off in longitudinal sections with a knife of the shape of a spatula. They are remarkably clever and quick at the work, and they have to be so, or else the bark would dry and the sticks would be unfit for peeling. The peeled sticks are gathered by boys, and stacked away in a heap to be eventually sold as firewood.

The bark that is peeled off is packed into blocks in layers, and put away in a cool place for several hours, being occasionally sprinkled with water. It is then taken out from the blocks, and the outer skin is scraped off with a curved knife. This is chiefly done by women or boys. A small tripod of cinnamon sticks about a foot and half high is made. Another stick about three feet long is run down from the apex of the tripod to the ground. On this stick is placed the bark, which, held by the pressure of the heel, is gently scraped with the curved knife. The bark then gets to be of a yellowish or greenish hue, which depends on the maturity of the sticks from which they have been peeled off. It is carefully put aside for a few hours, and is then made into long quills by fitting in one strip of bark into another and filling up the inside with small pieces of it. The cleanest and the brightest barks are used for the outer covering of the quills, and the rest is used for the stuffing. As the quills are turned out they are gently raised from the ground, and are placed in a stretcher made of coir strings and suspended from the roof. The moisture is thus evaporated and the quills get hardened, and after a few days they are slightly exposed to the sun daily until removed to the market. The ends of the quills are cut off to the usual length. The cinnamon is now ready for sale, and it is bundled into bales of one hundred pounds in weight, more or less.

The unpeelable sticks have their outer skin scraped, and the bark is chipped off. It is dried in the sun and "picked" and "bagged." It is then sold under the trade name of "Chips."

It is usual after the "Kuda Mosama" to prune the bushes, clear and weed the ground, and turn over the soil. This process of giving nourishment to the bushes secures a profitable crop in the "Maha Mosama" of the follwing May.

Cinnamon is brought down for sale to the native merchants, who get it first hand. They examine the quality of the bark by smell and taste in a few minutes, and accordingly fix a price for payment—a very easy process, indeed, to what was done in the early days! . . . "The next step after the "cinnamon has been carried into the Company's "storehouse is to examine its quality. This task is "imposed upon the Company's surgeons, and a dis-"agreeable one it proves to be. It is performed "by taking a few sticks out of each bundle and "chewing them successively, as the taste is the only "sure method of ascertaining the quality. The "cinnamon, by the repetition of this operation, "excoriates the tongue and the inside of the mouth, "and causes such an intolerable pain as renders "it impossible for them to continue the process "above two or three days successively. The surgeons "are, however, obliged in their turns to resume it, "as they are responsible for the goodness of the "cinnamon; it is customary for them to mitigate "the pain by eating a piece of bread and butter "between whiles." . . . .

Before the cinnamon is exported it is sorted into grades of the following assortment:—

No. 1 quality...... 20%	No. 3 quality...... 26%
No. 2 ,, 50%	No. 4 ,, 4%

Superior and extra superior grades are sold separately. The bales are packed in jute cloth when shipped.

Genuine cinnamon oil is obtained from the chips and cuttings from the quills. Inferior oil is obtained from a mixture of the bark (chips) and leaf. The Dutch paid the greatest attention to the distillation of the oil. They were the first to introduce the present process of distilling. Capt. Percival describes it as follows:—

"The fragments and small pieces which happen "to be broken off in packing up the bales are "collected and put into large tubs, about a hundred "weight into each, with just as much water as is "sufficient to cover them completely. This mass is "left for six or seven days to macerate and is after-"wards poured, by little and little, into a copper "alembic, to which a slow fire is applied. The water "which comes over, called '*Aqua Cinnamoni*' is "received in glass vessels of a peculiar construction, "and it is nearly of the colour of milk, and the oil "floats at the top of the glass recipient. The process "is slowly and cautiously conducted; one tub being "usually distilled off in twenty-four hours. Two "commissaires (who were members of the Council of "Justice in the time of the Dutch) are appointed to "superintend the whole of the process, and one of "them is always required to be present to prevent "the Apothecary who conducts the distillation from "smuggling any of the oil. After remaining for "some time in the recipient, the oil is carefully "skimmed off under the eye of the commissaires and "put into large bottles, which are sealed with the "Government Seal and brought to the Governor, "by whom they are placed in a chest secured in "the same manner. The reason of all these pre-"cautions is the great scarcity and value of this oil. "It is only made at the Company's laboratory at "Colombo, and the quantity is much less than can "be procured from an equal weight of any other "spice."—*Imperial Institute Journal.*

SOME WELL-KNOWN TEA PESTS.

REMEDY FOR RED SPIDER.

At the meeting of the Microscopical Society on Monday night, Mr. Miles read an interesting paper on Tea Pests, which was illustrated by slides. He said:—For many years planters in the various tea-growing districts have suffered in varying extent from the ravages of two well-known pests *viz.*, the tea mite (*Tetranchus bioculatus*), more commonly known as "Red Spider," and the Tea Bug (*Helopeltis theivora*) or "Mosquito Blight." There are several other pests to which I shall refer later on, but as these occur only spasmodically, their visits are not so much dreaded as the first two named.

I shall first proceed to give you a short account of the Tea Mite or "Red Spider" of which I exhibit a coloured drawing of the male species. I am indebted to the work of the late Mr. J. Wood-Mason for the following description of its structure and habits:—"The mite lives in societies on the upper surface of the full-grown leaves beneath an exceedingly delicate web, which it spins for itself as a shelter. This web, ordinarily invisible to the naked eye, is often rendered visible by the deposition upon it of dew in minute globules, which give to the leaves, when bathed in the sun, an indescribably splendid appearance of being sprinkled over with minute diamonds.

"The mites lay their eggs in hollows close to the ribs of the leaves usually. The eggs are oblate spheroids, flatter at one pole, by which they are firmly and broadly attached to the leaves, thin at the other, at which their transparent shell is suddenly drawn out into a long and tapering and slightly curled glassy process. They are red, like the Mite itself, and at the close of segmentation present at their surface a beautiful rediculated pattern, due to the presence of a concentrated and dark-coloured layer of protoplasm around the nuclei of all the cells of the blastoderm. The young arachnids leave the eggs as six-footed larvæ, which do not attach themselves as parasites to the bodies of insects and spiders, as do their distant relations the Trombidīdæ, nor undergo any of those strange changes which many other mites pass through in the course of their development, but attain to the adult condition by a simple change of skin that usually, though not perhaps invariably, is made on the same leaf as that on which they emerged as larvæ from the egg. The shells of the hatched eggs remain glued to the leaf for some time as microscopically small objects resembling porcelain saucers.

"Preparatory to the final moult the Mites draw all their legs in under them, become perfectly motionless, and appear to change from red to white; but no change of colour actually occurs, the appearance of whiteness which the thin and colourless old skin presents being due to the access of air to the interval between it and the new.

"The male differs from the female not only in size but also remarkably in the form of the body. The former sex is the smaller, and in the shape of the body resembles a plover's egg, being broadly round at the interior end and pointed posteriorly, while the latter resembles an egg which is similar and semi-circular in outline and nearly equal at both ends.

"The mite injures the tea plant by repeatedly puncturing the leaves and pumping out the liquid contents of the epidermis (? and parenchyma) through the punctures by the aid of the pharyngeal pump with which it, like all other arachnids, is provided. A freshly punctured leaf exhibits a regular and pretty pattern of irregular star-shaped patches of light green worked upon a dark ground. The pale spots are caused by the mites, and in the centre of nearly every one of them two most minute punctures can only with difficulty be made out even by the aid of a microscope. In order that the manner in which the punctures are made may be understood it will be necessary briefly to describe the mouth-parts of the animal. These consist of (1) a conical rostrum or beak, the sides of which are embraced and partly formed by (2) a pair of short, stout and jointed palpi or feelers which end in a pair of pincers, and answer to the great claw-bearing feelers of the scorpion and to the first maxillæ of an insect, and of (3) a pair of jaws or mandibles, which do not enter into the composition of the beak above and in front of which they lie but between which of them, on the contrary, there exists a wide interval. The rostrum is not serrated on the edges so as to resemble that of an ordinary tick, as it is in the European T. telarius, but on each

side of the minute slit-like opening which constitutes the mouth, and is placed at its lower extremity, it bears two minute, curved and probably moveable spines. At the end of the short fixed arms of the pincers of the feelers open the ducts of the glands, which furnish the viscid secretion wherewith the animals spin their protective webs. The mandibles or jaws are a pair of long and delicate needle shaped rods which ordinarily lie retracted out of sight into their sheaths ready to be shot-out with lightning rapidity. It is a remarkable fact that the sheaths, which appear to be none other than the basal joints of the mandibles, retain their primitive embryonic distinctness throughout life and do not coalesce in adult life so as to form a single common sheath as they are said to do in T. telarius. It is more probable that the leaves are punctured by these mandibular needles, and that the two little movable spines placed at the sides of the rostrum serve only to keep the sucker-shaped elevation around the mouth closely applied to the wounded spots in order that the buccal pump may act as effectually as possible, than that the latter perform the double duty of lancets and retentive hooks.

"I propose for the tea mite, which would appear to be unknown to science, the name of *Tetranychus bioculatus*, in allusion to its double (really two pairs of eyes)."

The tea mite is most destructive in the early part of the season, and increases at such a rate if there is a drought that a tea garden appears of a dull brick-red colour even when viewed from a distance. As soon as the heavy rains set in it disappears from the eye, but considerable numbers must be lying dormant as they quickly reappear if there is a break in the rains accompanied with hot sun.

The most important matter so far as planters are concerned is the discovery of an effectual remedy against this pest, and I take the following from Indian Museum Notes. Vol. 3. No. 1. Although experiments have not been conducted on a large scale, and therefore further tests are necessary before pronouncing a definite opinion, it would seem that a most valuable discovery has been made:—'A very complete and interesting series of reports by Mr. G F Playfair, on the results experiments conducted in Cachar upon the subject of the sulphur treatment or red spider, have been furnished by Messrs. Barry and Co. Five tons of refined flowers of sulphur were sent up to the garden for application as a remedy against red spider (*Tetranychus bioculatus*), which is one of the tea planter's most inveterate enemies. The sulphur was applied over an area of 138 acres, and the results appear to be so successful that the treatment seems likely to prove of the very greatest value.

"The method adopted was to put the sulphur into bags made of loose woven cloth and sprinkle the tea bushes by simply shaking these bags over them. In some cases the bushes were first splashed with water, but in localities where water was not easily obtainable the sulphur was applied without any previous watering. The sulphur was found to adhere fairly well, even on dry bushes, in spite of the high wind which blew both at the time that the sulphuring was going on and afterwards. The average cost of the treatment has been estimated by Mr. Playfair at Rs 8-4 per acre, including the price and freight of the sulphur and the cost of application. The sulphur was applied in the first instance at the rate of one hundredweight to the acre, but a large area was afterwards sulphured at the rate of two hundredweight to three acres, and an experiment was made over eleven acres of sprinkling a mixture of one part of sulphur with two parts of sifted lime. The last application does not appear to have been so successful as the undiluted sulphur. Besides destroying the red spider most effectively, Mr. Playfair is of opinion that the sulphur treatment is also useful against the mosquito blight (*Helopeltis theivora*) which is perhaps an even more destructive pest than red spider. Upon this point it will be useful to make further observations, as mites (such as red spider) are the only pest against which sulphur seems to have hitherto been successfully used in other parts of the world.

"It may be noticed that washes made of soap and sulphur combined have been recommended both in the United States and in England for use against mites like the red spider. The wash is sprayed on to the plants by means of a force pump fitted with a nozzle to give a very finely divided spray. This method of applying the sulphur may possible prove cheaper and more effectual than dusting it on to the leaves, though Mr. Playfair's experiments with sulphur in powder seemed so successful as to leave little to be desired. Compounds of soft soap and sulphur can now be purchased in England ready made, so as only to require the addition of water."

It is well to know that this insect can be of use to man, as the following curious note will show:—

"A note written some years ago by Mr. M. H. Clifford, late of the Forest Department, has recently been found among some old papers in Dehra. According to this note native hakims extract a kind of oil from the large velvety red mites (*Tetranychus sp.*) commonly known as red spiders of *Birbhoti* in the North-West Provinces. The oil is sold for medicinal purposes at a high price, and even the insects themselves fetch as much as a rupee per tola. It will be interesting to learn if anything further is known of the medicinal virtues attributed to this mite."

I have been searching through various old records to find out the earliest reference to these pests, and it would appear that in the year 1868 attention was first drawn to the subject. This date is also confirmed by enquiries I have made of those in a position to know when visiting the various tea districts. I shall now give you two extracts from the Proceedings of the Agricultural and Horticultural Society of India for 1869 and 1874, respectively.

I think there can be no doubt that these refer to "red spider" and "mosquito blight," the black spots of the latter being at first mistaken for a fungus. It is extremely probable that these pests were in existence for some time prior to the year 1868, but their depredations must have been on such a small scale as to prevent any serious notice being taken of them. Here is an extract dated 20th January, 1869:—

"The Secretary stated it would probably be in the recollection of some of the members present that Dr. Thomas Anderson had kindly offered to send to the Rev. M. J. Berkley certain specimens of tea leaves from Assam affected by a kind of black smut, and of blighted tea leaves from Cachar, both which were submitted at the monthly meeting in September last. Dr. Anderson had recently received a reply from Mr. Berkley, of which he now submitted the following extracts:—

"(1.) From Cachar I do not find any fungus. The spots are like those which occur in the genus *Depazea*, but there is not a trace of perithecia and they may arise either from some constitutional condition or from some peculiarity of weather. In many of the spots the whole of the parenchyma has vanished, and there is scarcely anything left in the centre, except the discoloured cuticle. The spots in this case are quite transparent when held up to the light. (2). Black Smut. I have in vain hunted for perfect fruit. The fungus belongs, as far as external characters go, to Leveilles genus Asterina but it is different from any species in my Herbarium. I should be glad to have specimens gathered early in the season, and then I may perhaps tell you whether it is undescribed or whether it really belongs to Asterina. (3). One leaf has incipient asterina without any parithecia, and the other has been sprinkled with the eggs of some mite, but I should not think with the red spider of our hothouses.

"It would be well to get me a fresh supply of diseased leaves from one or more estates, and I shall have great pleasure in examining them. It is very desirable to have further specimens of No 1. The fungus in No. 2 is superficial, and belongs, as I believe, to a genus very widely spread, and requires damp for its development."

Dr. Anderson mentioned that since he had sen the leaves from Cachar to Mr. Berkley he ha himself observed the diseased form of leaves (gene

ally) called "blight" by the Cachar planters) on some tea plants at Darjeeling. He carefully examined the diseased bushes, and could find no diseased leaves in any other stage of the disease but that forwarded to Mr. Berkley. He, however, found several leaves with a small insect lying under the epidermis of the leaf, and he supposed that this insect must have devoured the parenchyma and caused the transparent spots ("blight") with which the leaf was covered Dr. Anderson exhibited some of these leaves with the insect in position; also a few leaves with minute eggs of an insect, collected in patches on the surface of the leaf. Dr. Anderson said that he found many of the indigenous plants in the forest adjoining those tea estates in which blight had been observed were also affected. He particularly noticed Gordonia Wallichi a ternstroemiaceous plant nearly allied to tea a Polygonum, an Osbeckia and Moesa Montana as suffering much from the blight. Dr. Anderson showed young leaves of Chinchona Succirubra from a tea estate at Darjeeling; these leaves were covered with blight spots

Since the meeting was held, Dr. Anderson has examined the insect with the microscope, and finds that it is the pupa of an insect, probably a beetle, and that it lies under the epidermis Probably the destruction of the parenchyma is caused by the larva, and thus the almost microscopic eggs on the other leaves may belong to the same species.

The Secretary submitted the following extract of a letter from Mr. Grote on this subject:—

"Now about your tea bug, which on referring to your Gardener's Chronicle, 21st February you will find I brought before our R. H. S. Scientific Committee I now enclose a letter from Mr. Moore which expresses an opinion in support of Westwood, and assigns the bug to Helopeltis, a genus described by Signoret, who has figured a Ceylon species I have pointed out to Mr. Westwood that his proposed remedies are hardly applicable to large acres of plantation. I hope that the pessimist view of the bug's ravages may not be borne out by results. Similar insect visitations have occurred and again disappeared in the coffee plantations of Ceylon and the Wynaad"

The following are Messrs. Westwood and Moore's letters above referred to:—

"It is well known to me," observes Mr. Westwood "from the very remarkable upright horn on the scutellum. It belongs to the Cimicideous family (Capsidae) and is closely allied to a species which sucks our chrysanthemum buds and greatly damages the blooms. The only chance of checking it seems to me to ascertain the place of deposition and destruction of the eggs if possible. Another plan (which has been suggested for checking the ravages of the Vine Tortrix) is to burn green weeks to windward of the plants. I should also think that if bird limed strings were stretched over the plants, great numbers would be trapped, or light bags with the insides coated with some sticky material run along the top of the plants, like fishermen's landing nets, the flies would be thrown and caught in the nets."

I have made several references to "mosquito blight," and I shal next proceed to give you a short account of this insect, which is even more destructive than the former pest It is so named from its resemblance to the ordinary mosquito, although there is no relationship between them. It punctures the leaves and absorbs the juices leaving nothing but the upper and lower epidermis sticking together. After a time the leaf appears covered all over with brown spots which, however, soon change to black. The effect of this is to retard the growth of the plant, and although it makes a vigorous fight against its enemy it slowly succumbs to the attack.

This pest makes its appearance early in the rains, and gradually increases in numbers until the month of September, when it is in full force. By the end of this month many gardens in the Terai have to stop manufacture, as the tea bushes have entirely ceased to grow. Its effects are felt more or less in all the tea-growing districts, but its ravages are greatest in the Terai and lower Darjeeling Hills.

The first to draw attention to this particular pest was Mr. S. E. Peal, a well known planter in Assam, whose description of it appeared in the Proceedings of the Agricultural and Horticultural Society of India for 1872. There are eleven different species of this insect in various parts of the world, but only one so far has been recorded in India.

Another blight, known as "green fly," is reported from various places, but appears to be most prevalent in Darjeeling. It attacks the young shoots and prevents their opening out and development, whereby the outturn is considerably diminished. On the other hand, this retarded growth undoubtedly improves the quality of the yield. as the tea made from such leaf is always prettier in appearance and more flavoury in cup and usually realises extraordinary high prices. This pest therefore cannot be looked upon with the same degree of disfavour as the previous two.

Scale-insects made their appearance in the Kangra Valley and Assam in 1889, as several specimens were sent to me. I will read you a short note which I wrote at that time:—

"Since 1868 when they first began to attract attention, the family of Scale-insects have made themselves notorious as one of the most dreaded and destructive of all the known enemies of plant life First noticed in Australia, they travelled on to Cape Colony, and finally appeared in California, and as soon as they had established themselves in a new district proceeded to spread in all directions. In Cape Colony and California the principal sufferer was the orange tree, and so great was the damage done, that many owners of orange groves were ruined. In Ceylon, the Scale-insect has done immense damage to the coffee plant, and many plantations have been closed in consequence.

"In order to mark its coming of age, so to speak, it has turned its attention to tea, and already it has done no inconsiderable amount of damage to the bushes. It first appeared on two gardens in the Kangra Valley in the early part of this year (1889), and has since been reported from Assam, but there is nothing to show the manner of its introduction in either district. There is reference in part I. Vol. I Indian Insect Pests, to a new coccid found on cinchona in Sikkim which matures about April, and as the Scale-insect was first observed on tea about that time, there may be some connection between the two.

"There is little to describe about the actual insect, as it has not yet been observed in a free state. When a plant is attacked it soon becomes covered with little brown scales about one eighth of an inch in diameter, which adhere closely to the stem of the plant, but can be easily removed by inserting the blade of a penknife under them. Under the microscope these appear to be cases only, as there is no structure apparent, and in several I have detected a small puncture through which I imagine the imago escape. The insect appears to be most active in bright weather and almost disappears in the rains. Some specimens forwarded to me in November last were of quite a different character to those described above, the scale being soft and pulpy and covered on the outside by a thick coating of soft white waxy-looking substance. This may prove to be the female.

"Its effect on the tea plant is somewhat similar to that caused by the tea bug, but more marked, as the Scale-insect appears to absorb the juices of the plant through the stem, and the bush immediately begins to sicken, and would soon die down unless prompt measures were taken. The most effective, remedy is the kerosine emulsion which has been used with very good results in the United States and Ceylon, against the form of Scale-insect attacking the orange tree in the former and coffee in the latter country.

"The formulæ for preparing the kerosine emulsion recommended by the U. S. Department of Agriculture, were reproduced in Vol. VII., Parts II. and III., of the Society's Journal.

"I have already discovered a parasite of the Scale-insect which closely resembles Coccophagus cali-

fornicus, figured in the periodical Bulletin of the U. S. Department of Agriculture, division of Entomology, for March 1889. Though it may take some time for it to develop properly in order to be an effective enemy of the Scale insect, it is satisfactory to know that it is in existence

"This short note is merely intended to draw attention to a subject which may occupy a prominent position in the near future. Though not wishing to appear as an alarmist, I fear that tea is threatened with a new danger, which may do more harm than any of its predecessors, judging by what has happened in other parts of the world. I would seriously impress on all connected with this great industry, more especially managers of gardens, to be on the alert, and at the first indication of this pest, to adopt remedial measures at once to stamp it out, otherwise there is no telling what the consequences may be."

Various other pests in the shape of white-ants, caterpillars, beetles, moths, etc., attack the tea plant from time to time but usually over limited areas and at irregular intervals. Although their visits cause a good deal of trouble and annoyance to the gardens concerned, besides occasioning loss, yet the amount of damage done is so small in comparison with the former ones that they do not attract much attention.—*Indian Planters' Gazette*

TEA IN THE UPPER CHINDWIN.

The following is a list of the villages of the Upper Chindwin which export tea seeds, the inhabitants of all being Shans:—Kaungkan, Tingin, Kawya, Maungkan, Tason, Onbet, Mainwe, Tamanthe, Malin.

Tradition says that these *kins* (clearings) were cleared and planted some 200 years ago, the seed having been brought from Palaung (Northern Shan States). No one has ever heard of wild tea in the jungle; nor have I ever come across wild tea in the forests in spite of having always kept a very sharp look out for it, and it is my opinion that the tea plant is not wild, at any rate west of the Irrawaddy (by the way, wild cinnamon [*C. Zeylanicum*] has been found by me fairly common in the evergreen forests of the Uyu).

The gardens were originally planted for the sake of the leaves, that is, to make *letpet*, the so called pickled tea of Burma. However, some 20 years ago there arose a demand for the seed, at first intermittent, but since British occupation steady, and this has now become the main source of income to the owners, though the pickled tea is still collected and made as of old.

The first thing to be done in planting a *letpet-kin* is to find the right kind of soil, what is known as myeni, literally red earth. In this soil the tea-tree flourishes to perfection; the look of this earth is very characteristic, being a light red or buff coloured friable loam, which occurs in patches, and wherever these patches of red earth are found on the banks of the Chindwin there villages have been built and tea planted. The jungle being cleared of all brushwood and undergrowth, 3 or 4 seeds are dibbled into holes, the holes being either 2 or 4 cubits apart. The object of dibbling in more than one seed is to guard against blanks; however, all the seeds that germinate are allowed to grow. After the plants come up all the tending the gardens receive is periodical clearing of grass, small plants, weeds, and brushwood; the ground is never hoed, nor are the plants pruned, except when the ravages of a parasite known as *chibaung** have become so extensive as to kill the portions above ground, the dead tops are then hacked down with the ordinary Burmese dama, the plant at once throwing up stool shoots or root-suckers which in three years take the place of the old cut down plant. The small plants become large enough to give a crop of leaves in 3 years if the *kin* is kept free of jungle, but not till 5 years if the garden is dirty. Seed is borne when the plants are 8 years old, but they do not come into full bearing till 15 years of age, the normal existence of a tree being 40 to 50 years if not attacked by the parasite mentioned above. Some trees last longer than this, but old trees do not bear such good crops of seeds or leaves as middle-aged ones, being usually stagheaded, and are generally cut down, their places being taken by vigorous shoots thrown up by the stools, some stools as large as 3 feet in girth being seen. A light shade is beneficial to the plants and lessens the labour of keeping the gardens clean, as the shade kills out the rank grasses such as *thekke*, &c, which spring up if there is no shade. Heavy rains are not good for the seed crop, as the seed drops off without ripening; however, if the seedcrop is poor the leaf-crop is usually good and *vice versâ*.

* Loranthus Sp.

Each house owns from one to three *kins*, the various properties being bounded by rough cactus hedges.

As already stated there are two kinds of crops—the leaf-crop and the seed-crop, (*a*) *The leaf-crop*.—The trees flush three times a year in—(1) Tagu to Kason (April—May); (2) Wazo to Wagaung (July—August); and (3) Towthalin to Thadingyut (September—October). Of these three flushes the first gives the best leaf and brings the highest prices. The method of plucking is to pluck the whole shoot except one leaf which is left. Thus if there are three leaves in a shoot the shoot is nipped off just below the second leaf. Each owner then takes his crop of leaves and throws it into an iron cauldron* full of boiling water; it is left in this water till the leaves turn a yellow colour; the water is then thrown away and the leaves rolled by hand on mats; it is then ready to be sold to traders, who take it away either packed in bamboo crates or in the internode of the *myetsangye* bamboo (*Dendrocalamus Hamiltonii*). If one wanted to keep this tea it must either be kept buried in the ground, or the crates and bamboos must be kept in water. Kawya village, which has the largest extent of *kins*, makes on the average 20,000 viss of *letpet* annually. The price at the village for the produce of the first flush is usually Rs. 16 per 100 viss, for the other and later flushes Rs. 12-8-0 per 100 viss.

The seed-crop ripens in October and November; it is then collected, dried in the sun, and sold to Burmese traders, who come up for it. The trader shoots the seed into the bottom of his boat, the bottom being roughly lined with mats, and then takes it down to Kettha or Tonhe; where he sells it to the native agents of "tea-seed chiefs."

The price of the tea seed on the garden varies from Rs. 3 to Rs. 10 per basket, but to understand the method of buying the seed one must bear in mind that the trader, always a Burman, comes up in January or February to bargain for the seed crop of the following November. If possible, the trader makes a contract that the owner will sell him all the produce of the garden for a fixed sum per basket Thus in January 1894 the Maungkan villagers contracted to sell all their seed at Rs. 5 a basket. The trader then advances on the condition that, if the villagers cannot pay him back in tea-seed, they must pay him 100 per cent. on his money. If the trader cannot get a contract for the whole crop he always manages to make advances for a certain proportion of the crop on the same condition. Thus, this year, all the villagers of Kawya have had advances on the condition that they pay back next November (in seed), each basket to be counted as Rs. 3. Any left after the villagers have paid back their advances usually brings double the contract price. The trader then hires boats and takes the seed to Kettha or Tonhe, the rate of boat hire being from 2 annas to 4 annas per basket according to distance to Kettha. He will sell to agents of the tea planter for an average of Rs. 17 per maung (a maung—1 basket 10 pyis or 26 pyis) This is practically the end of the business as far as Burma is concerned, as from here it is carried by Chin or Manipuri coolies in baskets, Scotish fish-wife fashion, to Manipur. No tax is collected or any transit dues exacted anywhere along the route. The Chins are

* The ordinary Do of Burma, exactly the same as that which cutch boilers use for cutch boiling.

said to carry a load of one basket and a quarter, the average weight of one basket being 14 viss, and get Rs. 5 to Rs. 6 for the journey.

It will be seen that as in most trades the middlemen are the best off and absorb most of the profit. The Burman trader makes, even if he does not go in for the advance system, over cent. per cent, and of course his profits are doubled if he does. No Thaungdut coolies or men in any way are interested in the trade, the development of which is solely due to the Bengalis and Burmans. I believe Messrs. The Bombay Burma Trading Co. are experimenting as to the feasibility of sending seed to Assam *via* Calcutta; of course if they succeed that will settle all matters of transit dues both for Thaungdut and Manipur. I see no reason why the Bombay Burma Trading Co. should not succeed as no care to prevent shaking the effects of damp or of heat, is taken, any way prior to the seed reaching Manipur, by the present method which seems to be as unscientific as possible, and yet the tea-seed has, as is well-known, a first class reputation in Assam for germinating properties. The tea-seed experimented with, however, I would recommend being bought at any cost in November; the best way, of course, would be to advance money on the following season's crop, this system being the custom; or else only the leavings and old seeds which have been lying about can be got, which naturally would not have the same germinating power as fresh ripe seed.

From what I saw of the gardens they were wonderfully healthy considering the little care taken with them, as, with the exception of the parasite referred to, the trees all seemed clean, vigorous, and full of leaf. I should say tea-planting with European methods would be a great success if only the labour question could be successfully dealt with. That once settled, all a planter who proposed planting in the Chindwin would have to do would be to prospect for red earth, and from my own experience of the forests I am sure I have come across several tracts of similar earth to that on which the tea is grown.

There are two other points to be touched on, *viz*, a "maung" weight is spoken of above; this I am pretty sure is only a corruption, or rather the Burmese pronunciation of the word maund. I was informed that a "Maung" weighed about 22¾ viss (viss=3·68 lb.) and that would bring the "Maung" to about 80 lb, *i.e.*, the Bazaar maund of India.

2ndly, I believe some people still doubt that "Letpet" the pickled tea of Burma is made from *C. Theifera*; tho plant in the Chindwin and Katha is undoubtedly *C. Theifera*, and is not Elaeodendron; and it seems absurd that such a point should need proof, considering most of the gardens in Assam have had all their extensions for some years planted with plants grown from Chindwin seed. Besides this Mr. Oliver sent specimens in 1892 to Calcutta which were identified as *C. Theifera*.—*Indian Forester.*

C. W. A. BRUCE,
Div. Forest Officer, Upper Chindwin.

THE CULTIVATION OF CHICORY IN BELGIUM.

The Belgium Government considers chicory a perfectly legitimate drink, on an equal with coffee and chocolate, for the adulteration of coffee, chicory, and chocolate, and the sale of such adulterated articles, are prohibited by law. All varieties of chicory, according to Jussieu, are indigenous to the European continent. The United States Consul at Ghent says that all these varieties may be traced back to the *Chicorée sauvage* (*Cichorium intybus*) and the *Chicorée endive* (*Cichorium endivia*). The former, commonly called small chicory, is especially cultivated for its leaves, which make an excellent salad. This wild chicory, so-called, is a very common perennial plant in Belgium, and is frequently cultivated in gardens. It has a fusiform and taproot; its stalk grows three feet or more in height. It is abundant along the roads and in the pasture lands of Belgium; in the gardens it develops much more, the height of the stalk often exceeding six feet, and its leaves are larger. The plant is sown in the spring sometimes in beds, but more often along the borders. It only requires watering, and ordinary tilling and weeding. The green leaves only are ordinarily employed in medicine and domestic economy. For this purpose it is necessary to cut them from time to time, thus inducing new and more tender leaves to shoot forth; the stalk, too, must be frequently cut in order to delay as much as possible the florescence. Wild chicory is also an excellent fodder plant. Its most valuable property is its ability to grow in the worst soils, even such as are barren, chalky, or clayey. Almost all cattle eagerly hunt for the plant, and cows, which at first dislike it, rapidly become accustomed to its taste. By reason of its bitterness, it acts as a tonic, and animals who feed upon it are much less exposed to cutaneous diseases. Swine are especially fond of the roots. Among the varieties of wild chicory just described, the most important is chicory with large roots, known as "coffee chicory." It is a perennial plant, whose root, by torrefaction, acquires a bitter flavour, and an aroma, which is not unlike that of sugar converted into caramels. This is the variety which is daily increasing in commercial and industrial importance. In Belgium it largely replaces coffee in the lower ranks of society. West Flanders, in the district round Courtrai and Roulers, is its principal home. The method of its cultivation greatly resembles that of the beet. The seeds, which are very small, are sown by a hand drill, three rows at a time, during the months of April and May, and they are sown at a distance of about 15 inches apart. There are several varieties, or, rather subdivisions, of this variety. The two chief ones are known as the "wide-leaved chichory" *(à larges feuilles)*, and the "eel-headed chicory" *frisèes a têtes d'anguilles)*, of which the latter is considered the best. The seed is obtained by replanting in the month of March, the old stalks being dug out during the preceding autumn. In the course of a few weeks these go to seed. Each plant gives about 3 0 grains of seed. Another estimate gives 530 lb. of seed per acre. A temperate climate is required, and a vigorous soil, even slightly clayey, produces the best chicory with the heaviest roots. Sandy soils also are good, but the roots are generally lighter. The soil must be ploughed several weeks in advance. About 160,000 plants are raised per acre. A crop of from 11 to 14 tons of green roots is produced per acre. The harvest takes place in October and November. The roots must be immediately washed and dried, and then may be preserved for fifteen to eighteen months. The seeds, if put in a dry place, may be kept for seven years. The plant has no known disease, but is subject to the attacks of a worm which eats the roots. The leaves of the plant generally grow in a small tuft, are narrow, and do not exceed ten or twelve inches in height. The roots are carrotshaped (slightly larger), dark grey in colour on the exterior, and nearly dead white in the interior. The roots are dried on perforated racks in kilns by means of coke fires, and are then cut by machines into small pieces. These are known as cossettes, and chicory is generally exported to America in this form. Afterwards it is ground and sold in powder under the name of granulated chicory. Only very recently a Royal decree has been promulgated in Belgium declaring the essential qualities of pure chicory, requiring all packages to be legibly marked with the name, and forbidding, under heavy penalties, the sale of any adulteration as the genuine article. A similar law exists respecting coffee.—*Journal of the Society of Arts.*

CAMPHOR AND CHINESE VEGETABLE PRODUCTS.

The reports of the British Consuls at the various ports of China and Formosa, that are now being issued from the Foreign-office, contain much that is interesting on the natural products of the countries in relation to the late war. Thus, for instance, with regard to the camphor supply, the trade in which, it was feared, would be seriously injured, even if the supply were not actually stopped. Consul Hurst,

of Tainan, gives the following sketch of the business done in camphor. Last year, 1894, he says, shows a satisfactory development. 13·971 cwts. having left the port, as gained 7·530 cwts. in 1893. From January to July the prices ruled rather low. In the later month, camphor fetched, in the Hong Kong market, only £3 2s. per cwt. In August, however, on the outbreak of the war between China and Japan, there was a boom in the market, and the price rose at one time to £5 14s. per cwt. This was due to apprehensions entertained in Hong Kong of a blockade of the Formosa ports. The market quickly recovered from this abnormal figure, but prices were well maintained throughout the remainder of the year, the average price being about £4 per cwt. During the year, two more British firms (Parsees) have started in the business. There are now five foreign firms in Tainan, engaged in the camphor trade, namely, four British and one German.

In the course of the past year new districts have been opened up at Antoapo, Chau-lin-Ping, and other places in the Kagee district. An attempt was made last spring by the Kagee Magistrate to compel foreigners to convey camphor produced in Chau-lin-Ping by a circuitous road on its transit to the coast, instead of by another direct road, which shortened the journey by two days, on the plea that the former offered greater facilities for official inspection; but the Taot'ai, on being appealed to, at once admitted that foreign merchants were at liberty to convey their goods under transit pass by any route they pleased. The camphor produced is all brought down under transit pass; 71 passes were taken out in 1894, as against 57 in the previous year.

The new camphor forests are situated on the borders of savage territory, and the Chinese operatives, when cutting down trees and camphor distilling, are liable to attack by the savages. The hazardous nature of the occupation suggested to the Chinese authorities the levy of an impost, known as the "fang fei" or protection tax, on all camphor produced to pay for the maintenance of frontier guards to protect the camphor workers. Recently, owing to the exigencies of coast defence, the camphor districts have been largely denuded of troops, whose services were desired elsewhere. The continuance of the levy caused a certain amount of discontent on the part of the foreign merchants, as they said that these operations received merely nominal protection. Some outrages by savages had, at the time of writing, been reported from places in the district of Chip Chip. The camphor stills had been destroyed and the operators murdered, and the savages had escaped punishment.

In Chinkiang we are told that the chief item among native imports is wood oil, obtained from *Aleurites cordata*, which is invaluable in China for preserving or varnishing woodwork, and was imported to the value of over £150 000, though it is not exported to Europe.

A branch of culture, which, it is suggested, is open to fruit growers, is the extended growth of a kind of hawthorn, whose fruit is known in the north of China as "Shan ch'a." It is described as having a very agreeable, delicate, acid taste, and can be used either stewed, dried, or made into a jelly. Though largely consumed in Chinkiang, it is more especially a native of Shang Tung and Corea, and appears to be the *Crataegus pinnatafida*, Bronge. The plant is described as a very ornamental one in spring.—*Journal of the Society of Arts.*

LADY BIRDS IN THE KONA COFFEE DISTRICT.

KALLUA, KONA HAWAII,
June 6, 1895.

C. D. MILLER, ESQ., *President Kona Planters' Association.*

SIR:—Your committee appointed to investigate the blight on coffee and the work of the lady bird Cryptolaemus, beg to report as follows: About three years ago this blight, a species of Pulvinaria, made its first appearance in Kona, along the mauka government road at Holualoa. Thence it has spread and is still increasing and spreading until to-day, it has possession of about one hundred square miles of valuable land. It not only infects coffee, but also a large variety of trees, shrubs and herbs, including even the taro.

Nearly a year ago we received the first colonies of the lady bird Cryptolaemus, and during the five succeeding months many thousands were sent to us by the Hon Joseph Marsden, Commissioner of Agriculture. All of these colonies, with the exception of a few that were placed among the guava and ohia-ai trees, were liberated among our young coffee trees, which were then already suffering greatly from the effects of blight.

After the lapse of so many months, even allowing for a scanty reproduction during the winter months a decided increase of the lady bird should be noticeable. Instead of that, in all places where there was no restocking, the lady birds are practicably extinct, and the blight has increased to a frightful extent, particularly upon cultivated coffee.

On the other hand the lady birds have found a more suitable habitat upon the guava, and since the beginning of summer have been increasing freely in those localities where colonies had been liberated upon coffee in their vicinity, and it is an undoubted fact that the larva feed upon the eggmasses and thus help to check the increase of the blight. The fact has recently been observed that the scaled off, curled up bark of the guava affords such favourable shelter for pupation, seems to be largely the cause of the increase of the lady bird amongst those trees. To the fact that the coffee tree does not afford such shelter is possibly due the apparent dislike of the lady bird to these trees, and the suggestion that artificial shelter be afforded is in this connection of value. That the lady bird is feeding and increasing in localities makes it a valuable addition to the already existing enemies of Pulvinaria. The history of its work so far, however, and particularly its long winter rest, makes it very unsafe to say, at this time, that it will afford speedy or permanent relief to coffee planters, and we do not advise that we rest satisfied with what has been so far attained, but that while acknowledging the valuable work that has been inaugurated by Mr. Marsden, we should urge upon him that further efforts be made with the view of discovering other enemies of the Pulvinaria to reinforce such as have been already introduced. Whether, in the meantime we resort to spraying or to constant restocking with lady birds from the guava, we trust that every member of this association will agree with us in concluding that a well managed coffee plantation in Kona will still prove a profitable investment.

[Signed] WOLDEMAR MULLER,
Chairman.

—*Planters' Monthly.*

SEAWEED AS A MANURE

"There can be no two opinions," a writer in the *Mark Lane Express* says, "as to the value of seaweed as a green manure, containing as it does all the substances required for the growth of either cereals or green crops. Its ash is rich in salt, potash, sulphuric acid, and phosphate of lime. In fact, chemists tell us that this product of our shores contains at least twice as much of these valuable matters as the plants which are ordinarily grown by farmers as green manures. When, therefore, it is intelligently used so as to conserve in addition its most important nitrogenous constituents, seaweed is a fertiliser which is not easily beaten. Consequently, those who are fortunate enough to farm within easy reach of the coast, will be very unwise if they neglect to avail themselves of such a valuable manure. Farmers so situated may well betake themselves to the 'harvest of the sea' after the harvest of the land is safely gathered in." In Australia, especially where seaweed is used, it should be either quickly ploughed in or made into a compost with any vegetable refuse, leaves, stable litter, etc., and soil if laid upon the soil and allowed to dry before being covered its decomposition when it is ploughed in is much less rapid.—*Australian Agriculturist.*

THE CEYLON CINNAMON TRADE IN DAYS OF OLD:

AN OLIO.

In going through the old East India Company's Letter Books at the India Office, I have come across some interesting passages relating to

THE CEYLON CINNAMON TRADE,

and the attempt of the Company to introduce

THE CULTIVATION OF CINNAMON INTO ST. HELENA.

I have copied the passages *verbatim et literatim*: the first is as follows:—

London 28 Januarie 1660 [1].—Our Agent a d Fac ors at Fort St. George.—. . . . We have in several of our le'ters b th to you and our Factors, in ye Bay, desired that you would procure for us, as much cinnamon of any sort as you could g tt, and being stil very desirous of ye Comoditie, wee have taken into our con ideration, tho setling of a Factory f r that purpo o on ye Island o' *Zeilon*, and have conc uded, in regard of ye vicinity of your Residence, to ye said Is and, that it will beo most propper for y u to undertake this negotiation. We doe thereforo give you Comission and desire you serious'y to consider ho v it may boe put in execution, and brought to effect, and to send some fitt and able person to treat with ye King or his deputies fo ye setlin of a comodious Factory on yo Island, and that you draw up su h comission and Instructions, as ho may therohy bee enabled, to capitulate upon sure and proffitable termes, Wee leave this affaire, to your prudent, and serious manadgment, and desire you to proceede therein with all diligence, And not to be disanimated, or beaten off, from this or any other hopefull, and proffitable Designe, by ye Dutch whoe wee believe will not now dare, to dis urbe us in our trade, or abuse us as formerly they have done, it having pleased ye Almighty to restore our *Kings Maty*, by whose royall favour and assistance, wee donbt not but to recover from them due satisfaction for what is past, and a good settlement with them in trade for the time to come However, if it should so happen, that ye said Dutch shall at any time hereafter, interrupt you in your lawfu l way of Comerce at any place, or bring any losse, or damadge upon us, wee require you to protest fully against them, for ye same, and to drove up ye damadge to acerteyne som which having attested under your hands, let it be se t home unto us, and wee doubt not but to receive full satisfaction from them.

Soon after the above was written (viz. in June 1661) the Marriage Treaty between Charles II. and the Infanta of Portugal was concluded by one clause of which it was agreed, that if either Great Britain or Portugal should ever take Ceylon from the Dutch the cinnamon trade was to be divided between the two nations. The next extract is as follows:—

London, the 20th. February 1661 [2].—Our Agent and Factors at Fort St. George.—............By our ship *Discovery* wee advised you of our desires to have as much Cinanamon [*sic*] sent us home as might bee procured, and to that purpose we Ordered you to endeavour the sotling of a Factory upon the *Island of Zeilon*, and then referred it to your serious consideration how it might bee put in execution, and brought to effectt, and wee hope some progress is made therein. Wee now confirme that our Order, and if it shall not bee alreadie done, then wee desire you to undertake the same, with all convenient expedition, at an easie charge.

That an attempt was made by the English Agent at Fort St. George to gain such a footing in the island is pretty certain; for in the *Beknopte Historie* (as translated in the C.B.R.A.S. Jl. Vol. IX) we read:—

At the end of the year 1663, the Governor Rijikloff van Goens returned to Batavia, and was replaced by Heer Jacob Hustaert, during whose administration nothing further happened, save that the English endeavoured to gain a footing on the Island by the aid of the Candian Court: this they were, however, unable to do, as the relations between the King and the Company remained peaceable.

Of course, this may be a mere misapprehension of the unsuccessful mission sent by Sir Edward Winter in 1664 for the release of the English captives in Ceylon, as mentioned by Valentyn (see translation in *Lit. Reg.*, Vol. III, p. 424); but I think that it was hoped to kill two birds with one stone, and that the Dutch suspicions were well founded. Raja Sinha seems to have acted with his usual duplicity; for, which in 1666 he "communicated to His Excellency Van Goens a letter which he had received from the English" in 1667, we read, the company "captured some persons whom the King had sent as Ambassadors to the English, then enemies of the Hononrable Company, at Madraspatnam, and brought them to Colombo." In the next extract, it will be seen, the Company unite the questions of the redemption of the captives and the acquisition of cinnamon in the frankest way:—

London, 7 December 1669.—Our Agent and Counsell in Fort St. George.— . , . . We take notice what you write concerning ye Captives in Zeilon, and could heartily wish you could find out some way for their redemption, and to treate wth the King of Can'y by some *Portugeze* or *natives* about it, and the bringing downe *Cinamon* to the Eastward port of *Zeilon*, and advise us how it is with *Cattiarrow*, for that the Dutch affirme, they have erected twoe forts there, and if any such beo, advise us when done, for that wee believe, it is purposely done, since wee have bin treating with them, and insisting upon that, as a free place, thereby to prevent us from having recourse thither.

It was quite true that the Dutch had recently occupied Kottiyar, and erected a fort there; as may be seen by the statements in the *Beknopte Historie* and in the Considerations written by Governor Van Goens for his successor, as given in Valentyn (*Ceylon*, p. 211). From the latter it would appear, that the occupation was for the purpose of levying customs duties on the extensive trade with the Coromandel coast; and that the earthen fort was intended to last but a couple of years. Finding that all their efforts to obtain a share in the Ceylon cinnamon trade were in vain, the Company then determined to try and grow cinnamon in St. Helena, as is seen by the next extract:—

London 8th January 1674 [5].—Our Agent and Counsell at Fort St. George. ...... If you can by meanes of the natives from Ceylon procure any cinnamon plants, we would have you send a Box of them for St. Helena, and what direccons you can for the cultivating of them, for we would ,by all meanes improve the plantation of yt. Island and if it canot be raised by the plants, then if by seeds, or fruites, or by what other meanes and send them to St. Helena to ye. Governr. wth. what direccons you can get.

In the next extract the cinnamon question takes precedence of the captives, though great sympathy is expressed for the latter:—

London, 15th December 1676.—Our Agent and Councell at Fort St. George.— . . . . Wee againe recomend to you the procureing of some Cinnamon Plants for St. Helena, and the release of Captives at Ceylon for whome wee have a great compassion.

From the next extracts it will be seen that the Company determined to have two strings to their bow; and, if they could not obtain plants of the true cinnamon from Ceylon, to grow cassia and other bastard kinds of cinnamon:

London 12th December 1677.—Our Agent and Councell at Fort St. George.— . . . Wee have now made Cinamon Tramboone Cinamon Cassia Lignum and Turmerick our own Comodities, which you are to note, and if you can procure any Cinamon Plants from Zeilone send them to St. Helena with Directions for Planting thereof, which we would doe to make an experiment.

London, 15th March 1677 [8].—Our President and Councell at Suratt.— . . . Wee recomend to you the procuring us what quantities you can of the Sorts of Cassia Lignum formerly written for, and canot beleeve but you may procure some for us, as easily as the Comanders doe for themselves, which they could not doe but by yor Permission or at least connivance, wee would have you obtain some Plants of Tramboone Cinamon and Cassia Lignum as also Pepper and send them to St. Helena and Bombay with directions for the Planting and ordering them.

(At the same time the Company wrote to their Agent and Council at Bantam to send clove and nutmeg plants to St. Helena.) In the next extract the Ceylon captives are referred to first, but the most stress is laid on the procuring of cinnamon plants :—

London, 3rd January, 1678-9.—Our Agent & Councell at Fort St. George.— . . . Wee must still (and alwaies) reminde you to use all possible endeavours for redemption of the poor English Captives from the King of Candy, and would have you omitt no Invention for procuring Cinamon Plants to be sent as formerly directed, with great care, and the rather because (though it be a small thing) it may in consequence prove a great advantage to your native Country; One piece of a Sugar Cane carried by a Madera Ship to Barbadoes was the first cause of that Plantation and manufacture of Sugar, and that within the memory of some yet living.

The accuracy of the last statement I cannot verify. The last extract on this subject is as follows :—

London April 22th, 1681.—Our President & Councel at Surat.— . . . There is also another matter of Nationall concernment as relating to our owne interest, which must in most especial manner recomend to your assistance our care and invention vizt. The procuring for us by all possible contrivance very great quantities of Cassia Lignum Cinamon Tramboone & Cinamon Lamatt, which is the best expedient we can think of to keep downe the exorbitant price of the Dutch force England and all other Nations to pay for Cinamon since they were masters of the sole trade of Zeilone, wherefore to compasse all that is possible of those bastard kinds of Cinamon if our Stock should fall short you may take up money, and for price shall not limit you, knowing you will use this liberty with justice and discretion.

At the same time the Agent and Council at Bantam were instructed to buy at any price all the "cassia lignum" they could get, and send it home; and to continue this until countermanded. In the Court Book of the Company a few years later the following entry appears :—

15th October 1685.—Resolved, that the owners and Commanders of ye Compa shipping be permitted to bring home Cinamon of the growth of Ceylon free of stated damage.

So much for cinnamon.

As to TEA, there are many references in the Company's books to this commodity. Here is one, in which the price mentioned will make Ceylon planters sigh for the "good old days" :—

8th Sept, 1675.—It is ordered that a warrt be made out for payment of ye moneys due to the Governor for pots of Thea by him presented to several persons of quality for ye compa service, as also for 3 pots D.D. to Mr. Harris for ye Compa own use, weighing in all 74lb : 14oz : ¼ after ye rate of 20s per lb. according to a report now read and approved.

In one of their letters to Bantam, the Company request 100 lb. of good tea to be sent ("no trash") for their own use, properly packed.

The conversation turning on

CEYLON TEA.

one of the members of the Council (who is also a member of the Council of the Royal Asiatic Society), said that he was very fond of cold tea, but found that it always turned thick. He had asked planters for a remedy; but could learn of none, except the addition of more water. Perhaps some of your readers may be able to suggest a cure.

A meeting of the Royal Asiatic Society was held last Tuesday, when the Secretary read a paper by Hofrath Georg Bühler, C.I.E., P.H.D., on "Future Archaeological Explorations in India." In this the writer deprecated the abandonment by the Indian Government of archaeological explorations &c. ; and urged the confining of work to the most important sites. The R. A. Society was asked to move the Indian Government in this matter. In the subsequent discussion Dr. Leitner, Mr. R. Sewell and others took part, the former at great length very discursively. Ceylon Buddhists may be interested to learn, that, in Dr. Leitner's opinion, the mahant at Buddha Gaya is the best possible person to be in charge of the Maha Bodhi temple.

D. W. F.

Croydon, June 14th.

THE CAMPHOR TRADE :—FORMOSA AND KOBE.

The Orient for Orientals and Japan for the Japanese is a cry among merchants of this country which must not be lost sight of in considering the question. Formosa now being a part of this Empire, the Japanese are fairly entitled to make the best of it in their own interests. Already preparations are being made to lay a cable from Japan to Formosa, and regular steamers will shortly be running to the island, proving that Japan intends to monopolize the trade if that be found possible.

It will be learned with interest that Admiral Kabayama, the Governor-General of Formosa, has already been approached by Japanese merchants interested in the camphor trade and desirous of extending their operations to the South, with a view to obtaining permission to explore the camphor woods. His Excellency was, however, so exclusively occupied with strategical and political considerations that he was unable to make any reply. It is, however, assumed by those who are in a position to have accurate information that the camphor woods in Formosa, most of which are in the hands of the State, will be placed under strict control by the Government. It is a fact not generally known that there are large tracts of country in Japan covered with camphor trees which are yet practically untouched. These, however, belong to the Government, while the trees in the hands of private owners are rapidly dwindling in number and those remaining are in almost inaccessible mountain regions, where there is little or no water for distilling purposes. The Government forests are strictly protected, only the felling of old trees being here and there permitted, although it is generally believed that the axe of wood-poachers is not altogether absent. It has been the policy of the Government for several years to rigorously preserve its quasi-virgin forests, both for the general good of the country and in view of its own future wants, such as for naval yards and so forth.

Now to apply these facts to Formosa, it is suggested that the Government may adopt similar methods with regard to the camphor woods there. Admiral Kabayama, the Governor-General, being a naval man, will doubtless bear in mind the necessity for preserving trees with a view to the wants of the navy—a matter which will be of the greater importance, if as is rumoured, a great naval port is to be established at the Pescadores. Be that as it may, it is but reasonable to assume that in Formosa forest culture will henceforth be conducted on the same lines as in Japan. Those Japanese who are most interested in the development of Formosa believe that no camphor will be forthcoming thence for at least a year after the Japanese occupation is completed,—perhaps longer,—and that no cutting of trees will be permitted until the politi-

cal state of the island is settled and the title-deeds of the lucky possessors of camphor domains have been investigated and acknowledged by the new Government, after which permits will be issued with the greatest reserve.

As is already well known among those interested in Camphor production, the Nitrate King, Colonel North, has done a splendid stroke of business in cornering the article, which within a few months has gone up 100 per cent., and in the hands of such a powerful concern the price is not likely to give way, while, if it suits the ring, it may be driven up to almost any figure. It must be borne in mind, also, that it is to the interest of the Japanese to work with these speculators at home, as by carefully husbanding supplies producers can dictate terms to the whole world and derive great pecuniary benefit from the production of camphor in their own land and the newly acquired territory. They are indeed perfectly safe from competition, it being a well-known fact, as our Formosan correspondent remarks, that a camphor tree, like the oak, is a tree of slow growth, and for generations hence there will be no fear of production in territory outside of Japan. It should be remarked by the way, that woods of Camphor trees in Japan and Formosa are merely found interspersed among other trees; indeed we learn from the report of a Japanese who was recently sent by an important house of business to investigate the matter that the camphor trees in Formosa are by no means as plentiful as is sometimes supposed, the tree only growing in certain favourable situations. The production of camphor in Formosa cannot, therefore, be relied upon as inexhaustible.

One word more with regard to the probable direction of the future export from Formosa. It may be considerod as certain that the Japanese will attempt to dispose of the article by way of Japan, unless, of course, they should see a marked advantage in sending it to Hongkong. That port, as is well known, has a reputation for wild speculation in camphor; it often occurs there that prices are 10 per cent. above those in Japan and if the consuming markets at home; and in the merchants of Hongkong choose to put so much extra money into the pockets of Formosa camphor producers, they will doubtless be made welcome to do so when opportunity occurs ater on.—*Kobe Chronicle.*

THE COCAINE HABIT.

A *Tit-Bits* representative has had a talk with a London West-end pharmacist about fortunes spent on drugs, and the pharmacist has poured some sad tales into the willing ear. About cocaine, for example, the chemist said he has a customer, a very wealthy gentlemen with an affection in his legs, who spends no less than £3 a week in cocaine. He is not alone in this respect, the chemist said; he could name hundreds of cases where members of the aristocracy only keep themselves going by means of cocaine or morphia. At present the cocaine habit is a perfect curse to many ladies in the West-end, who are ruining their constitutions and spending small fortunes in the purchase of the drug. A lady went to this disciple of Galen the other day, entering the shop in a very stealthy manner—a characteristic which most people addicted to the cocaine habit have—and bought right away 6 oz. of cocaine, costing over £20, and in a comparatively short period was back again, wanting the bottle replenished.

We admire the grand manner in which these West-end men speak of their customers who are rarely less than "members of the aristocracy." The curious thing is that we never meet in real life with pharmacists of position who talk so freely about what their customers take.—*Chemist and Druggist.*

"IN TROPICAL LANDS."

[This is from an old friend of a Ceylon planter now at home, —a county magnate of the old school. It must amuse the author, and his comments on Free Trade sound like a voice from the middle ages and his style exactly like Pepys; He is the only man however, who notes the remarks on the manipulation of tea—and he *is right there;* only Ceylon has to provide for depraved tastes!]

(From a very Old Hand.)

Mr. Sinclair's book on Peru, &c., is very interesting. I have read all the Peru part. He seems to recommend the temperate parts to Europeans, the chief objection being at present insufficient carriage, but the valley of the Amazon is apparently too hot and steamy for any European workers.

I think at page 32 he suggests that tea should be dried in the sun like coca leaf, and undergo no other manipulation. This is just what was done years ago with very good Indian and, I believe, China tea. Dr. Bridge, of Wellington who was *very* fond of tea used to have it always, he told me from a friend of his, in that way and in sacks of leaves uncurled. They looked like a spread out yellowish brown leaf. Mr. Sinclair seems a bit of a Radical and a Free Trader. He says the potato famine of 1846 compelled Free Trade. This is not so, for it was decided in 1843 or rather in September 1841. When Parliament opened for business Major Beresford, afterwards War Minister, asked me to come and dine with him that day, for he would come home to Pall Mall and leave again for the House of Commons, but during an hour or so told me everything. He said he did not at all like what Peel was saying about Free Trade. I expect in 1846 the remaining half-crown of duty was taken off, many shillings having been taken off before that.

THE HALF-YEAR'S EXPORTS FROM CEYLON: JANUARY TO JUNE 1895.

It may be useful to offer a few remarks on the comparative table of exports, for the half-year ended the 30th June last, which we published in our Overland Edition of the 4th instant, and to bring some of the more important figures contained therein into a focus. Coffee, by prescriptive title, although alas! no longer by its total intrinsic value and its weight, occupies the first place in the table; and we are glad to note that it shows some increase. It is not a little that, after its lamentable decadence from over a million cwt. in the seventies, it should present even so respectable an outturn as 38,303 cwt. for the half year, as against 12,981 cwt. for the first half of 1894, and 32,939 and 25,392 for the corresponding periods of the two previous years. It would be too much, perhaps, to expect that our exports of this article at the end of the year will exhibit the same progressive increase, and that 1895 will show thrice the outturn of last year; but with the growing attention paid to the product—attention fully justified both by current and prospective prices and by the unwisdom of rushing into Tea - we may hope that Coffee has at last touched the bottom, and that there will be a gradual, if not very startling, growth in exports of all varieties of the fragrant bean.

The downward tendency of Cinchona has not been arrested, and is not likely to be, so long as prices remain what they are; but what a fall from the the 3¼ million, 2½ million and more than 1 million lb., of bark sent away in the first half of 1892, 1893 and 1894 respectively to the less than half million lb., of the past six months! The time, though not yet, may come some day for the resuscitation of Cinchona; but meanwhile there is more than compensation in the steady

increase in the output of Tea. We have sent away already more than 51 million lb., of tea, as against 45 million, 42 million and 40 million lb., during the first half of the three years preceding. If the increase has been steady, and so far gratifying, it is satisfactory to note that the advance is no longer by the leaps and bounds which gave the whole Colony such pleasure when the industry was in its infancy. We are quite content, to let other countries outship us as they may, that the development of the industry should keep pace with the demand. For one thing, we are not lagging behind; nor have we come to the end of our tether; and the readiness with which all the tea that we produce is taken up is the best evidence that we are not going too fast. On the other hand, it would be a fatal mistake, against which we have uttered more than one note of warning, to place any restrictions on the reasonable and natural extension of cultivation. To do so while we are doing our best to find new markets for our teas and to strengthen our position in markets we have already won, would be to place ourselves in the unfortunate position of not being able promptly to respond to the very demand we have toiled to create, and to divert capital, as has already been done, from our own shores to other lands. While not relaxing in the least in the efforts which have made our teas known in every civilized country in the world, we should see to it, in our own interest, that the lack of Ceylon tea of any grade, would not bring our rivals into prominence, and thus weaken our own position in any place in which we have gained a footing. While saying thus much, are we not justified in drawing attention to the lower average which our teas fetch, week after week, in comparison with Indians, and even to the difference in price between our "stand out" teas and those of our big neighbour? In this connection we would draw special attention to the counsel contained in Messrs. Gow, Wilson and Stanton's circular, which we issued as a Supplement on last Tuesday. We cannot aim too strenuously after a high standard, and at the same time strive to maintain, and even increase, the fertility of our soils by the aid of manures and by intelligent cultivation. We wish we could believe that sufficient attention is being paid to these matters throughout the country. Of course, there are honourable and striking exceptions; but the general rule seems still rather too like contentment with things as they are.

The uncertainty of Cocoa crops is exhibited in the figures before us, which at 18,962 cwt. for the half year, give an advance of over 50 per cent on last year's exports, while they are short of those of 1893 which stood at 21,324 cwt. for the six months, the figures for the same period of 1892 having been 12,404 cwt. The alternative big and little crops which characterized coffee seem now to distinguish this product; but if the outturn of the current year should fall short of that for 1893, the producer will be entitled to much sympathy, especially in view of the way that prices have tumbled down. Still, cocoa is a very useful string to the planters' bow, as are also Cardamoms which, with an export of 213,742 lb., are a minor product by no means to be despised. The figures for the current year are in excess of those for the three previous years, and, with the prices now ruling, there is every encouragement for extensions into moist and shady corners of estates.

Cinnamon, despite reports of bad seasons and trouble with peelers, holds up its head bravely—the exports for the half-year of 693,891 lb. of quilled bark, being in excess of the figures for the two previous years, though 100,000 less than the first six months of 1892 showed. In Chips, however, this year distances the three preceding years by between 130,000 to 140,000 lb., so that in the total it stands first. Prices too, after a long interval, are continuing to be satisfactory; and the steady demand for the spice augurs well for the future. The mysteries of Coconut Oil are difficult to fathom. The falling-off in exports this year of 46,000 cwt., as compared with last year, and of about 107,000 cwt. as compared with 1892, brings 1895 almost on a line with 1893, when 146,112 cwt. were exported during the first six months; but prices have not risen in sympathy with the limited supply. Can it be that the supply has shrunk in view of the restricted demand? The seasons have, no doubt, had something to do with the exports of Coconut Oil, as with those of Copra which stands at about one-fourth of last year, one-half of 1893, and one-fifth of 1892. The droughts of last year have told on Coconut crops, while the Desiccating Mills have proved greedy customers for all the nuts produced within a certain radius. The quantity of the desiccated preparations which have left our shores, is returned at 3,588,915 lb. or somewhat more than double the figures for last year; but it must be remembered that the latter half of 1894 saw a considerable increase on the first half, and that 1895 so far shows an advance of only half a million lbs on the figures for the corresponding months of 1893. An increase of 15 per cent in the output of desiccated preparations in two years should be nothing remarkable, if the taste for them is growing; but there are murmurs of over-production and leading to falling prices. We fancy that mills in which quality is studied, and the processes are carried on with cleanliness and thoroughness, have nothing to fear. Of Coconuts we exported over 5 million—an average number; but in Plumbago, there is a falling-off about 50 per cent as compared with 1892 and 1893. This year is slightly ahead of last year, when the exports of the mineral were only 122,582 cwt.; but as a demand has sprung up, and better prices are said to be ruling, the second half of 1895 may possibly see heavy exports. Coir shows an increase in rope, yarn and fibre, but not anything much, though the supply is believed to be in excess of the demand in London. The remaining minor exports call for no special remark; but deer, elk and sambur horns make a very small show with only 159 cwt.—a natural result, we suppose, of the measures taken to check the indiscriminate slaughter of game.

PLANTING IN SUMATRA:—TOBACCO *vs.* COFFEE.

Deli-Sumatra, July 6.

You are quite right, Sumatra would be better than German East Africa. But there are no billets going here as coffee is yet in its infancy; and the fine tobacco prices realised for last crop have, for the present, rather thrown coffee into the shade again. What is wanted is a moneyed partner for coffee here. I can imagine no better investment. Tobacco of course is better for those that know it. But it fully bears out the old Duke's saying—"A high rate of interest means bad security." The other day I was travelling with a Manager of a Tobacco Co, whose operations last year cost £35,000. and *half* of the crop has just brought in £70,000!! Pro-di-gi-ous!!!

I have just had a run over to Perak: but only saw the immediate neighbourhood of Taipeang. In no way was I favorably impressed: but I am prejudiced against the Peninsula perhaps.

Somebody in Kandy has got his hair off about my cock-a-doodle-doos!

"DEATH IN THE TEAPOT."

WE believe the above saying to be "as old as the hills." Presumably, there must have been some reason why it found currency. Probably it had its origin in the ignorant use of the leaf during the early days of its introduction into Europe. But there certainly exists a further cause for it which does not seem to have become extinct even after a prolonged period in the extended use of tea. It is astonishing how little attention is paid by some housekeepers to the condition of the teapot. We have heard recently of a case of illness occurring in England due to this neglect. For some time all the members of a family seemed to sicken, and for no cause that could be assigned. At length it became noticeable that the nausea experienced was more frequent after the breakfast tea had been drunk. This led at first to a confirmation of the belief that had arisen that the tea obtained was not of the same quality or description that had been in customary use. Reference, however, proved that this belief was incorrect. It was then noticed that the disagreeable flavour and subsequent nausea was not experienced with and after the morning tea partaken of before the family got up. The fact that this was made in a different teapot to that in use at the table, led to examination of both. The result of this was to find the strainer of the latter, almost choked by a foul black deposit the issue to months of careless cleansing. The strainer was then wholly removed and the tea poured through one of the little wire strainers fixed to the spout now in such general and preferred use. After doing this the disagreeable flavour and unpleasant after-result to the tea drinking ceased. In many families too little attention is given to this matter of clearing the strainers of all deposit after use. The fixed strainer that was the cause of the ill-effects mentioned had far better go entirely out of use. Even with ordinary care this is always liable to retain some stale leaf, and it is the case that their use is being gradually abandoned for the suspended outside strainer. When this has not been adopted, much complaint may have arisen from the cause indicated. It cannot be too strongly impressed upon housekeepers that an absolutely clean teapot is essential to the good making of tea. Directly this precaution is neglected, the infusion of the best tea becomes more or less spoilt as to flavour, and, as in the particular case referred to, this neglect, if long continued, may become the source of illness. It has often been remarked that the common earthenware teapots make sweeter tea than those of metal, and it is probable that this advantage is due to the fact that the former are rarely provided with inside strainers.

ROYAL BOTANIC GARDENS, PERADENIYA.

Mr. Hugh F. MacMillan has been appointed in Mr. Clark's place as head-gardener of Peradeniya, and is expected out on the 22nd in the B.I. "Rewa." He has been at Kew Gardens for the last two years and is highly spoken of.

A NEW TAPIOCA FACTORY was recently opened at Sungei Ujong. The factory is believed to be the largest in the Straits. The boiler is of 20 H.P. and the engine 16 H.P., the plant being capable of putting through 300 pikuls of tapioca root daily with ease.—*Pinang Gazette.*

COCONUT PLANTING NORTH OF THE MAHAOYA.

July 16.

Of course the absorbing topic of interest to all agriculturists is the weather; and to those in the lowcountry the interest is intensified by its utter uncertainty of recent years.

THE SOUTH-WEST MONSOON

this year is, if ever it could be so characterized,

A MISERABLE FAILURE.

The little monsoon opened with over 5 inches in 24 hours, and shut up five days after with a total of 6·81. The big monsoon opened on the 11th June with over 5 inches and there was another heavy plump on the 18th of 4·50 and the monsoon closed with 11·77 inches. If quantity only is looked to, there was ample rain for the two months, but when it comes in deluges, in two or three days, when more than half runs off the soil, it is simply a snare; for it induces cultivators to sow, and, as rain does not follow at reasonable intervals the grain only sprouts to be burnt off. This has been the fate of numerous cheenas this year, and only those who happened to sow with the April rains have anything to harvest. This is hard lines for the poor goiyas.

Those who have had

COCONUT CLEARINGS

to plant have also suffered, and I know of one superintendent who is having the plants over a large acreage watered. From the 20th June to date, with the exception of two light showers there has been no rain. Throughout all this time the weather has been very cloudy, the sun rarely shining for half an hour at a time. The clouds are all carried by a stiff breeze to the hills and I see that Maskeliya is already complaining of too much rain.

This has also been a very

SICKLY SEASON,

not only in the N.-W. Province but, as far as my information goes, all over the low country. This has greatly interfered with all works. Not much paddy was sown for the *Yala* crop, but there is much activity in preparing for the *Maha* sowing.

I see that all ordinary filters are condemned as tending rather to contaminate than purify the water. Can you or any of your learned readers tell me if the ordinary three chatty filter can be included in this category, supposing that the charcoal sand and pebbles are changed once a month?

THE CAMPHOR INDUSTRY IN CEYLON.

A gentleman who is experimenting, writes:—

"You will find in the Tropical Agriculturist of November 1st 1893, p. 326 an account of Formosa Camphor Industry, but I cannot make out yet exactly how the camphor is caught. I have had some leaves and twigs boiling for 48 hours and the steam smelt very strongly of camphor; but it appears to have all boiled away, as I cannot find any camphor. I wish I had a proper still as I have some damaged branches that might be experimented on. It is a plant that coppices first rate, sending up strong shoots from the old stump in abundance. Old books I have, state that the camphor is 'extracted from the roots, leaves and young twigs' and if so why could not the trees be coppiced every 4 or 5 years?"

Another correspondent writes:—

"What is the nature of the camphor from the chips. I should not think it volatilizes and I should think that after boiling, it would float on the surface. A simple worm could be made for a few rupees; I'll be glad to show any one how."

Clearly the camphor tree industry has come to stay with us, whether on a little or big scale, time will show. We are on the lookout for more exact information as to preparation. Has any one in Ceylon got Spon's "Encyclopædia" (we miss the volume for "c")? Meantime we quote from the "Encyclopædia Britannica" in reference to Formosan camphor as follows:—

The crude and primitive process of distillation is thus described by Mr. E. C. Taintor in his *Trade Report of Tamsui*, 1869:—"A long wooden trough, frequently hollowed out from the trunk of a tree, is fixed over a furnace and protected by a coating of clay. Water is poured into it, and a board perforated with numerous small holes is luted over it. Over these holes the chips [of the camphor-wood] are placed and covered with earthenware pots. Heat being applied in the furnace, the steam passes through the chips, carrying with it the camphor, which condenses in the form of minute white crystals in the upper part of the pots." It is collected and stored in vats to await exportation, during which time it gives out from 3 to 4 per cent of uncrystallizable camphor oil of a yellowish colour, which has been suggested for use in medicine and the arts in the same way as spirits of turpentine.

CEYLON TEA IN RUSSIA: WHAT M. ROGIVUE IS DOING.

M. Rogivue has written to Mr. A. Philip, Secretary of the Planters' Association, regarding the steps he has taken to push the sale of Ceylon Tea in Russia and giving an indication of his plans for the future. Through the courtesy of Mr. Philip we are enabled to publish the letter, which we do herewith in a slightly abbreviated form:—

Mockba, Moscow, May 16th, 1895.

A. Philip Esq., Secretary to the Planters' Association of Ceylon, Kandy.

Dear Sir,—Since my last private report to the late Chairman of the Planters' Association (Mr. G. F. Walker), and my letter to you of the 27th July—8th August 1894 the "Tea Fund"—as I have seen in the Ceylon papers—has been dissolved and replaced by the Committee of "Thirty" which, seemingly, devoting its entire time and available funds *to* and *for* the American Campaign, has none left for me, judging, at least, from the fact that since the beginning of its sitting, it never passed a word on my subject or on my work in this country.

I am however certain that the Committee of the "Thirty" and the Tea Planters of Ceylon will not forget and ignore that if Ceylon Tea is now making its ways in Russia it is entirely due to my efforts, to the work I have done, and the expenses I made during the past four years to introduce it, and that after all—although the progress may perhaps appear to be somewhat small and slow and not quite to expectations—I have done more for this purpose than I had promised to do with the limited funds placed at my disposal as free grants from the Tea Fund.

No doubt the progress would have been more rapid and worthy of note had I had the necessary means to advertise on a larger scale than I did.

I will however not complain any more and will leave it to the Ceylon Planters, their Associations or Committees to judge for themselves whether it is good policy from their part not to devote a little more attention on this part of the world, such a large country of tea drinkers as Russia is.

Reverting to the past four years of my operations since my arrival in Russia (July 1890) when Ceylon Tea was almost unknown in the country, and nobody would drink it, I may report the progress of its imports—resp., Consumption, in *Moscow* only as follow;

Imported by me up to 31st December;—

		1891	1892	1893	1894
	Russ. lb.	49,153	112,280	161,579	209,256
by other Firms from London, especially through Germany about......	Russ. lb.	10,000	25,000	21,200	380,000*
		59,153	137,280	373,579	589,256

for Moscow alone more than half a million pounds in 1894, to which is to be added the shipments from London (direct or via Germany) to other places than Moscow * and the direct shipments from Colombo to Russia which in 1894 have been over *35,000 Eng: lb.*

I have now *four* Retail Magazines in Moscow, one in Nijni Novgorod and one in Warsaw selling only *Pure* Ceylon Tea in packets and cases, of which the signboards with the words, "*Ceylon Tea Pure and Economical*" conspicuously shown in large gilt letters on black ground is a useful advertisement, as well as the magazines of my *now* 16 special agents in the province who have the monopoly of my mark, selling only *Ceylon Tea* and *Ceylon products*, to the entire exclusion of Chinese Tea. Besides I am selling my Tea wholesale to more than 400 clients—shop-keepers, retailers, Hotels, Restaurants, Buffet-keepers Hospitals, etc. all over Russia.

The teas I sell most are Pekoe and Pekoe Souchong worth in London 8½d to 10d and 6½d to 6¾d respectively which as a rule are found good qualities and answering the requirements according to the purse and taste of the generality of my customers, and all classes of Russians. Better teas like broken and orange pekoes, though selling also in small quantity, are not quite suitable, Russians as a rule, preferring *a whole leaf tea* and finding these latter sorts (broken and orange pekoe) too strong.

I have not overcome yet all the difficulties and have still to struggle hard against the Chinese Tea competitors who are sparing nothing for doing me wrong with nasty and dirty tricks to run me and my tea down. Not later than six weeks ago I was summoned to appear before the Kiew Criminal Court in order to answer a charge of having sold an article of consumption "Ceylon tea"—injurious to the health of people. The charge was a malicious one brought against me, no doubt by someone paid by the competition. The short of it was that a few sorts of my tea were analysed by the police laboratory, found all right and I was let off. * * *

In the year 1893 I spent Roubles 2,500 and in 1894 over Rb. 3,500 *cash* for advertisements in Newspapers, placards, pamphlets, circulars &c. and gave aways *gratis* a great part of the tea the Tea Fund has sent me; but what is this for such a wide country like Russia! Five times more money ought to be sacrificed every year for, at least, three years still, but I really cannot do it alone.

Mr. Rogivue then refers to a forthcoming exhibition at Nigni Novgorod and states what, in his opinion, would be the best method for bringing the tea before the public at the Exhibition. He gives details as to the most effective method of advertising and sums up by saying:—

In all a sum of about Roubles 15,000 (say £st. 1400) would be required for the purpose, and I would be very thankful if the Committee of "Thirty" was to help me in the limit of possibility in covering it, for it is not in my power to bear it entirely alone.

I only wish that some Ceylon men interested in the subject would come over here and judge for themselves what I am doing to represent Ceylon Tea in this country.

You might have already heard of the expedition, the Russian Government has sent out for the sake of studying the cultivation of tea. As far as I know, the expedition consists of four gentlemen amongst them Professor Krasnow and Inspector Klingen, and according to the newspapers they arrived at Calcutta and are proceeding to the Northern Districts of India whence they will go, I think first to Ceylon and afterwards to China and Japan. The aim of this expedition is the study of tea planting for the Russian Government intends to make a trial with Tea plantation in the Caucasus, first in the district round Batoum. It was proposed to me to join the expedition.

Having sometimes difficulties with the Russian authorities, I should like to be able to prove to them

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* It is difficult to get here the exact figures at the Customs but these are about correct.—M. R.

* Other places in Russia would be impossible for me to control, but I know that Odessa and St. Petersburg are importing a pretty large quantity.—M.R.

that I am the sole Agent in Russia for the Ceylon Planters' Association, and would thank you to send me a certificate to to this effect, legalized by the Russian Consul in Colombo.—I am, &c.

(Signed) M. ROGIVUE.

PLANTERS' DIFFICULTIES IN THE STRAITS, SELANGOR.

So much has been written in the local press and elsewhere, on the alleged difficulties and restrictions connected with European planting enterprise in Selangor, that it would not be fair to the State to leave the subject entirely unnoticed in this Report, although I do not propose to deal with it in detail. I am not prepared to assert that difficulties and restrictions do not exist, although thoir extent has been somewhat exaggerated, but such of them as are not necessarily incidental to the conditions of the State (*e.g.*, the keen competition for labour between contractors, miners and planters, and the occasional clashing of planting and mining interests in the inland district) will, I hope, gradually be removed, and planters may rest assured that Government is as anxious as they are themselves that their enterprise should be rewarded with every success. Experience, however, has shown that granting concessions of large areas of land for planting purposes, without any provision for actual cultivation, conduces rather to the promotion of companies than the encouragement of agriculture, and I am glad to be able to state, from personal observation, that *bona fide* planters do not object to a fair cultivation clause, and also to call attention to the fact that every coffee estate in Selangor is now being cultivated with success. The formation of a Planters' Association, of which Mr. E. V. Carey is the energetic Chairman, is a matter for general congratulation, as European planters can now express their views on any subject with the weight attaching to conclusions arrived at by a representative body, and the Government can deal with them collectively, instead of individually. I hope that the time is not far distant when a representative of the planting interest will be invited to become a Member of the State Council.—*J. P. Rodger, Acting British Resident.*

PLANTING IN SELANGOR (STRAITS) 1894.

The development of planting, mainly in connection with the cultivation of Liberian coffee, both by Europeans and natives, has made very rapid strides during the last few years, and is one of the most reassuring features connected with the progressive development of the State. There is still, of course, a large area of metalliferous land, unworked or only partially worked, for mining purposes, but sooner or later, the deposits of alluvial tin (and no true lodes have yet been discovered) will be worked out, and the continued prosperity of the State will then depend upon whether or not tin mining has been replaced by some more permanent industry. Fortunately, the planting of Liberian coffee in Selangor has now passed beyond the experimental stage, and may fairly be considered an assured success, not merely at Klang, although planters have recently shown a special predilection for that district, but in every district of the State. It may now also be asserted, without much fear of contradiction, that contrary to the opinion formerly prevailing, Liberian coffee grows as well as, or even better, in rich, low-lying ground than on the hills. As far as Selangor is concerned, this has been conclusively proved by the present condition of the coffee estate planted in the neighbourhood of Klang, some ten years ago, by the Datoh Dagang, as the coffee on this estate, notwithstanding the somewhat neglected cultivation of native landholders, compares favourably with the most high-cultivated hill-grown coffee in any part of the State. The importance of his discovery can scarcely be over-estimated, as it renders immediately available for profitable cultivation vast tracts of land in the coast districts, where metalliferous deposits are practically unknown, whilst it leaves the inland districts fully available for purposes of mining. Again, although the high price of coffee has recently attracted the special attention of planters to this particular form of cultivation, the soil and climate of Selangor are well adapted for other tropical products—such, for example, as pepper, gambier, indigo and sugar: possibly also cacoa and tobacco—and the fluctuation of prices may at any time cause a rapid change in the relative areas of land under cultivation for one product rather than for another.—*J. P. Rodger, Acting British Resident.*

THE FLORA OF MOUNT KINABALU.

In the *Transactions* of the Linnean Society, Dr. Stapf treats of the flora of Mount Kinabalu, drawing his conclusions from the collections of Dr. G. D. Haviland in 1892, and also using the material obtained by Sir Hugh Low more than forty years ago, and the more recent investigations of Mr. F. W. Burbidge. Dr. Stapf distinguishes four zones. The first, the Hill Zone, extending from the foot of the mountains up to 3,000 feet, is almost entirely occupied by cultivated land and young jungle, in which are found palms of the genera *Areca*, *Pinanga*, and *Calamus*, and numerous bamboos. In the cultivated fields grow *Caladium esculentum*, rice, bananas, tobabco, and vegetables. Next comes the Lower Mountain Zone, extending up to 6,000 feet, occupied for the most part by old jungle or primeval evergreen forest, abounding in creepers, epiphytes, and shrubs. The ground is covered with ferns and mosses, and bamboos grow in thick clumps. In the Upper Mountain Zone (6,000 to 10,500 feet) two formations occur, namely, evergeen dwarf forest and bogs. The forest consist of stunted, twised, and weather-beaten trunks thickly droped with dripping moss and festoons of lichens. Only conifers grow into fine trees in sheltered spots. The shrubs blossom all the year round. Nine kinds of rhododendrons adorn the ridge, and at least five species of pitcher plants are seen climbing the trees or straggling along the ground. Ferns attain their most luxuriant development in this zone. The bogs are confined to a few spots, and produce a *Drosera*, a *Utricularia*, and some interesting Plants of Australian affinity. From 10,500 feet to the summit at 12,698 feet most of the ground is bare rock. Shrubs extend to 12,000 feet, and buttercups, potentillas, and gentians grow in certain boggy spots.—*Natural Science.*

INDIAN TEA FOR TIBET.

With reference to the necessity of extending the markets for Indian tea our correspondent with the Sikkim-Tibet Boundary Commission makes a suggestion which ought to commend itself to the Tea Association. The Tibetans, he says, only require their tea to possess three qualities—it must be Chinese, it must be coarse and strong, and it must cost from R2 to R2·8 per seer. They are also partial to receiving it in the form of bricks. If supplied in the ordinary way it would only confuse them. Our correspondent thinks that, bearing these predilections in minds, Indian tea planters might easily produce a tea which would just suit the palates of our Tibetan neighbours. But it must be Chinese, hints some objector. Why not? Let it be made up into bricks and smuggled across the frontier, the merchants taking care to sell it at fancy prices and calling it by some high-sounding Chinese name. But would that not be cheating? Well, if it comes to that, we should simply be deceiving the Tibetans for

their own good. There is no doubt ordinary Indian tea is better than ordinary Chinese tea, and if the Tibetans once began to drink it they would not be able to leave off. But with true Mongolian prejudice they refuse to believe in any except the Chinese plant. As our correspondent says: "There is hardly a doubt that it would be bought up greedily, but once let it be known that it is not the real (*i.e.*, the Chinese) article, and no Tibetan would take it as a gift." Upon such narrow-mindedness the everyday devices of commerce would be expended in vain.—*Englishm n.*

CAMPHOR TREE IN NORTHERN INDIA.

It is not only in Ceylon that the idea of planting the camphor tree is attracting attention. In a specially contributed article in the *Planter* to hand, the subject is seriously discussed, and attention is drawn to the probable suitability of the cooler ravines and valleys of the hill countries in India. It is pointed out that the camphor tree is no stranger to this country. We have tolerably good evidence from the records of the East India Company that at one time it flourished in Nepaul and the ancient kingdom of Tipra, or Tipperah, which in the middle of the 17th century embraced the lands between the present Megna and the Upper Irrawaddy. Even within the present century, camphor was exported from Chittagong. The discovery by the hillmen of the secret of extracting camphor from the root of the tree probably led to the extinction of the plant. There is no reason, however, why it should not be revived. —*M. Times*, July 19.

VARIOUS PLANTING OTES.

COFFEE PLANTING promises to be the most important industry of British Central America. The export of coffee for 1893 was nearly double that of 1892, and in 1894 again nearly doubles 1893, and the coffee crop of 1895 can now be definitely expected to fully double that of 1894. The land under cultivation for coffee has been greatly extended during the past year, and probably the acreage now planted is quite double what it was two years ago. The average coffee crop gathered throughout the country during the past year has been satisfactory, and the prices obtained on the London market have been good.—*Echo*, 3rd July.

CEYLON TEA IN RUSSIA.—In another column we publish an account of how Ceylon tea is being pushed in Russia by Mr. Rogivne. That gentleman, according to his own showing, has not found the task an easy one, and he too raises the cry for more money. One thing that will strike the reader is that, many as the difficulties are in America, they do not include the risk of being charged in the Police Court with attempting to poison the lieges! Truely the Russians are in a bad way and almost deserve to be left to poison themselves with China tea!

CEYLON TEA: PACKAGES AND SWEEPINGS.—We are indebted to our friend Mr. Thos. Christy for two interesting letters by last mail to which we call the attention of our merchants and planters. In one place he pays a special compliment to our Ceylon packages; but he wants for West Africa and other moist regions that a special airtight lid should be adopted for cases of tea.—We regret very much that any injustice should inadvertently be done to certain London Tea Warehouse owners; but we feel sure Mr. Christy's letter will make all clear and give satisfaction.—Mr. Christy deserves well of our tea planters in every way; he gives an immense amount of time to the working of the manufacture of tea sweepings into caffeine or theine, and latterly has seen how a quantity of old stuff lying in the warehouse for a long time, could be utilised, much to the satisfaction of the importers, the merchants and the brokers.

PATENT 2,608.—February 6th 1894. Packing tea &c. Davidson, S. C. Sirocco Engineering Works, Belfast, and MaGuire, F. G. Colombo, Ceylon. The machine shown is for shaking, during packing, the chests or receptacles in which tea and other granular materials are packed. The receptacle S is secured on a table C between jaws Q and the table is oscillated about its trunnions N by the crank F and may be at the same time rotated about the central pin M.—*Patent Journal*, June 26th.

TEA PESTS.—Mr. Miles read an interesting paper on well-known tea pests at the Microscopical Society, Calcutta, on Monday. It appears that the red spider leads off in warm dry weather. The rains when they set in wash this pest away, only to start another—the mosquito blight. When the rains, cease, this pest also cases, and in bright weather is succeeded by the scale insect, and so on. One pest seems to be a benefactor—the green fly. But in that case why call it a pest? The enemies of the tea-plant are many, and Dr. Watt has lately discovered a host of new pests and blights. Altogether Dr. Watt has, we believe, collected between sixty and seventy pests and some thirty fungoid blights.—*Englishman.*

PRECIOUS STONES AND CHEMISTRY.—Mr. Arthur Chamberlin, in the *Mineral Collector (U.S.)*, says:—"An accurate scientific method has at last been discovered, whereby precious stones may be distinguished from the fraudulent gems which are now so numerously manufactured in the laboratories of Paris and other Continental cities. This is by testing them for their specific gravity, but not by the scales occasionally used for large stones, and which, however delicate, are unreliable. The new means of detection of bogus gems is simple and ingenious, and is likely to be widely adopted in the jewelry trade. It is the chemist who has added this knowledge to the lapidary's art. Several liquids have been discovered, which are more than three and a half times as dense as water, and in which, therefore, the amethyst, the beryl, and other light stones will actully float. The most useful of these liquids is methylene iodide, which has a specific gravity of 3·3, and in which the tourmaline readily floats. Moreover, it is not corrosive or in any way dangerous. It being impossible for the lapidiary to prepare a number of liquids each having the specific gravity of a different gem stone, the methylene iodide is easily deluted by adding benzine to it. Each drop of benzine added makes the liquid less dense, and so it may be used to separate the tourmaline and all the lighter gem stones from each other. If it be doubtful whether a certain gem be an acquamarine or a chrysoberyl, all that is necessary is to place it in a tube of the liquid, together with a small fragment of true acquamarine to serve as an index. If it be a chrysoberyl which has a specific gravity of 3·6, it will sink like lead. If it be an aquamarine, which has a specific gravity of 2·7, it will float. If the liquid be then stirred and diluted until the index fragment is exactly suspended, the gem also will neither float nor sink, but will remain poised beside it. This method may be adopted with all of the lighter stones. But for heavier gems, like the carbuncle, the jargoon, the sapphire, the ruby, the spinal, the topaz, and the diamond, a different liquid is necessary. This has lately been discovered by the Dutch mineralogist Retgers. He has found a colourless solid compound which melts at a temperature far below that of boiling water to a clear liquid five times as dense as water, and therefore sufficiently dense to float any known precious stone. This compound is the double nitrate of silver and thallium. Its most remarkable property is, that it will mix in any desired proportion with warm water, so that by dilution the specific gravity may be easily reduced. This fused mass may be reduced in density by adding water, drop by drop, so as to suspend in succession carbuncle, sapphire, ruby and diamond. These tests of precious stones may be made in a few minutes, and are absolutely reliable, as all stones of the same nature have the same specific gravity. None of the bogus rubies or diamonds have the same weight as those they are made to imitate."—*Public Opinion.*

CEYLON LABOUR SUPPLY AND THE PLANTERS' ASSOCIATION:

GOOD ADVICE TO YOUNG SUPERINTENDENTS BIG AND FIRMS; THE INDO-CEYLON RAILWAY.

The Memorandum laid before the "Labour Supply Standing Committee" of the Planters' Association, and by it, amended and published in the form given elsewhere, is unquestionably one of the most practical deliverances of the kind, that har appeared for a long time. Leaders of the Association have been accustomed to say they can do little or nothing in respect of labour supply and management; but if only they gave us periodical bulletins of the kind before us—we speak of its positive not its negative opinions—good must inevitably result. It is no secret that when Mr. Melville White called this particular Committee together to discuss a question with which the country was supposed to be "ringing" there was not a single scrap of paper, no letter nor resolution from a District Association to lay before it. Even Dimbula, Maskeliya (the home of Mr. A. E. Wright) and the Kelani Valley were silent! Surley this shews how great has been the change which had come over the dreams of the planters since "the Ides of March"! Every one, a few months ago, supposed that enormous advances, multiplied crimping and a generally short cooly supply were to be the rain of the Tea industry and our printers could scarcely keep pace with the letters and remedies which poured in upon them. Where are those dreamers, or physicians now? How marvellous the change which three months' steady immigration of coolies has wrought! And this brings us at once to a notable practical ommission from the Memorandum before us, namely, a recommendation to Superintendents to endeavour to influence the coolies who wish to visit their country, to do so a little later and if possible to distribute their visits more equally over the year. In other words, it has to be pointed ont to "Ramasamy"—who would not be at all slow to appreciate the sitnation—that the arrangement which fitted in admirably with "coffee"—through which all and sundry were allowed to make for "the cost" early in the year,—does not at all suit "tea"; for, indeed, the early months of the year and on up till May are frequently among the busiest. We do not think it would be at all impossible, to get the period of departure gradually shifted to what are really the slack months, say beginning about 15th May. We know that the risk of exposure to wet weather in passing to and fro, is a great objection; but with through railway communication, and even now with rail and steamer, this is bound to be obviated.

We now come to the Memorandum itself, and as the most notable passage in the whole document—and here especially do we recognise "the fine Roman hand" of the Chairman, we quote:—"The cooly is very much what the master "makes him and there is far less change in the "cooly than there is in some Superintendents "of the day." This is most true, and it is a text on which Mr. Melville White and his fellow Committee men might very well enlarge. All the trouble which brought a Medical Aid Ordinance and tax on the planters in the "seventies" arose from the appearance of a generation of young planters whose one object was "to make haste to be rich" and who had little or no sympathy with the coolies or care for their welfare. To the very same cause in the present day may be traced the evil of "over advancing," crimping and the flying about of "tundus" to the unsettlement of canganies and the disorganisation of coolies. How different from the old typical planter after the pattern set by Robt. Boyd Tytler, Peter Moir—who has just passed away—and may more of a similar order. Who ever heard of coolies neglected in the lines, or sent to the Court to settle their quarrels in their day? And why should not Managers and Superintendents take as much pains in the present era? The very first requisite, indisputably, is a thorough working command of the language of the coolies. Can every young planter of the present day in charge of an estate, really understand a coolie who comes to him with a complaint, it may be, against his cangany? Are we going too far in suggesting that the Planters' Association might establish a form of examination in coolie Tamil and grant a certificate to young men satisfying two or three competent examiners? Such certificate would of course, not be all-important, but we venture to say, it would by no means be scouted by proprietors and agents looking out for men to take charge of estates. Very good advice is given as to the management of coast advances and we would press home their responsibility on our chief Agency and Proprietary Firms and Companies, as pointed out in the concluding portion of the Memorandum. For "crimping," evils of the "tundu" system and all other ills associated with the local transfer and scarcity of coolies, it is most correctly and comprehensively alleged that there is no better remedy than to increase the supply of coolies.

And now we come to what is said about "facilitating the journeys of coolies to and from Ceylon." Here we regret to find that the Chairman has forsaken the best traditions of the Planters' Association—ever in the van of progress,—and has adopted a narrow-minded, parochial, lukewarm view of a great and important undertaking. Here is what Mr. Melville-White wrote (as published by the local "Times"):—

"The question of the Indo-Ceylon railway seems hardly within the range of practical politics yet and there may be a fear that the journey by rail will be too expensive and possibly bring the home of the cooly too near the country of his adoption."

This reminds us of nothing so much as the worse than lukewarm, the sneering allusions, with which certain individual leaders were wont to meet our programme for a Nawalapitiya-Haputale Railway in the early "seventies." The late Mr. George Wall was not alone in trying to give it the "go-by"; for several others supported him in "tickling the ears of the groundlings" by saying that it was not within the region of "practical politics" nor would be for a decade or score of years to follow. We need not say how such criticism and opposition served but to whet the earnestness of the few who stood by us; and to do the Association justice, that body as a whole gave uniform support to the memorials which the then far-away and neglected Uva Planters laid before it, although several of the leaders would have sneered them out of court if they dared. Now, we trust and believe it would be the same in the present case. For, let it be noted, the Indo-Ceylon Railway is the child in the first instance, of an eminent and very old member of the Association, Mr. Edward J. Young. He was specially chosen by the Association to visit Southern India and report on the Labour Question, and valuable as his Report may be in other respects, there can be no question than any im-

partial critic,—as well as Mr. Young himself—would confess that his most practical and notable suggestion for the improvement of the Cooly Labour Supply, was his starting, or rather revival of, the proposal for an Indo-Ceylon Railway. That being the fact, we would expect the Planters' Association to back up their Special Commissioner,—to be in the very forefront in urging on this great and notable work,—in place of its Chairman truckling to petty official and a miserably local unofficial opinion, by telling us "it is hardly within the range of practical politics." How is it to be brought within that range? How was sanction for a Railway to Nanuoya first and then to Haputale secured—after seven years' battling in the one case and sixteen in the other? Not certainly by the Association or any of its leaders stating, this does not mean "practical politics." We might, however, pass this over on the part of the Chairman if he did not add the really childish remarks to apparently justify his position, that the journey by rail would be too expensive for the cooly and possibly bring him too near his home. The one proposition we would suppose, might be regarded as antagonistic to the other! But fancy anyone supposing that a Company, or other owner of an Indo-Ceylon Railway would not adapt their rates so as to catch the great cooly traffic from Southern India to Ceylon! Is it any wonder that the "Standing Committee" struck out two-thirds of the foolish sentence of the Chairman and contented themselves with saying (evidently not with unanimity):—"The question of the Indo-Ceylon Railway seems hardly within the range of practical politics as yet." It is a case with us of being "thankfu' for sma' mercies;" but certainly the day will come when the gentlemen who subscribed to this half-hearted declaration will be ashamed that they did not do their little best to show the world that they were practically and specially interested in an Indo-Ceylon Railway and that they were prepared to welcome and encourage every effort put forth to mature, and secure the beginning of what must be one of the most notable works of improvement ever undertaken in Ceylon or Southern India. For the planters it not only means a far more abundant supply of coolies with the means of tapping new and over-populated districts, but it also means cheaper and more regular freights from the great additional importance which must be given to the port of Colombo. For the coolies, it would not only mean freedom from much exposure to wet, cold, malaria, fever, and fatal illness; but also a great saving of time, which means money to them and their employer. We need say no more for the present. There is no better means of bringing any desirable undertaking—however, large—within "the range of practical politics" than by urging it on public attention and by getting together all possible information concerning it. A work that has been the subject of two important Reports from leading Engineers in Ceylon and Southern India, with estimates and the results of surveys,—that has been taken up by a strong Syndicate in London with the favour it is understood of the India Office authorities, if not of those of the Colonial Office,—can scarcely we think be treated with the offhand remark that it is not yet, or "hardly yet within the range of practical politics."

Gutta Percha in the Straits.—In Pahang, after 11th August, a Government notification prohibits absolutely the search for and export of gutta percha.—*Penang Gazette.*

THE LABOUR SUPPLY QUESTION IN CEYLON.

LABOUR SUPPLY STANDING COMMITTEE.

Minutes of proceedings of a meeting of the Labour Supply Standing Committee held at Kandy on Friday, the 12th day of July 1895, at three o'clock in the afternoon.

Present.—Messrs. A. Melville White, (Chairman Planters' Association of Ceylon); A. Philip, (Secretary, Planters' Association of Ceylon); Hon. Mr. Giles F. Walker (M.L.C.), Messrs. W. D. Gibbon, James Westland, J. H. Barber, R. S. Duff Tytler, A. L. Cross, W. Maitland. A. W. S. Sackville, John H. Starey.

The notice calling the meeting was read.

The minutes of proceedings of a meeting of the Labour Supply Committee held at Kandy on Thursday, the 10th August, 1893, were read. Resolved:—"That they be and they hereby are confirmed."

Considered memorandum by the Chairman on the Labour Question. Resolved:—"That as amended it be adopted and published; (2) that copies of the memorandum be forwarded to the Ceylon Chamber of Commerce, and to the various District Associations for consideration."

The Labour Supply Standing Committee then adjourned. A. Philip, Secretary.

Memorandum referred to:—

THE LABOUR QUESTION MEMORANDUM.

The so-called Labour Question may be conveniently divided into 5 parts, some of which are no doubt inseparably connected with the others, and act and react on each other.

These are:—I The supply of and demand for coolies.

II Facilitating the journeys of coolies to and from Ceylon.

III Coast Advances and local advances.

IV Crimping.

V The "tundu system."

In one or other of these forms the Labour Question has ever recurringly been before the Planters' Association almost since its foundation.

It is desirable to remember that the Planters' Association

(a) has no power to bind even its own members to carry out its decisions, much less non-members;

(b) its members are scattered all over the country and cannot be summoned to meet at a moments notice and without something fairly important for discussion, attendance involving an absence from other business of from 2 to 3 days.

(c) although the work of the Association is deputed to be carried on by a committee of 123 members yet the real work is voluntarily done by at most 10 members who attend nearly every meeting. Consideration of these conditions seems to indicate,

(1) that the Planters' Association is in no position to undertake the actual recruiting and introduction of coolies to Ceylon. It has no machinery and no funds for the purpose. Private effort has been successful hitherto in increasing the labour force in Ceylon from time to time; and if any scheme for combination is launched it will be found best to group a few neighbouring estates which are short of labour or which for other reasons desire to join. These have the motive of self-interest to make them work the scheme, it is in a manageable compass, each would (or should) know the men employed as recruitors, to whom advances could be given, one of their number might go to the cooly districts if necessary, and being a small body agreements binding every one could be entered into at little cost. Such combinations will not be accomplished however until the Labour Question is a good deal more acute than it is at present. It is desirable however to state as emphatically as possible that it is not and ought not to be any part of the functions of the Association to procure coolies for those who are short of labour or in any way to interfere between employer and labourer except by way of recommendation. This has been the invariable attitude in the past, and circular after circular has been issued by the Planters' Association and Chamber of Commerce. Notoriously the recommendations in

these circulars have not been carried out generally by the planting community but no blame can attach to the Association for that, and that body can but repeat what has been recommended in the past.

(2) Facilitating the journeys of coolies to and from Ceylon is a work well within the province of the Association and a perusal of recent reports of its proceedings shows that it has never been backward in its endeavours to secure such facilities Doubtless any further improvements which can be suggested in that direction will receive the early attention they deserve. The question of the Indo-Ceylon railway seems hardly within the range of practical polities as yet.

(3) Regulation of Coast advances, and local advances. This again is a matter entirely beyond the province of the Association except by way of recommendation. If the advice of the Association is not generally followed that body should not be reproached with the results. Individual effort *generally applied*, can best reduce advances, coupled with the introduction, of fresh coolies from the coast. Small combinations of estates could introduce fresh labour and in some of the small Districts these combinations might work well, but it is doubtful if small combinations could reduce advances where immense areas of cultivated land are adjacent, as coolies will naturally go where they can get most money and least work. There appears therefore to be no better remedy for the evil of high advances than *Increasing the supply of Coolies*.

(4) Local advances, crimping, and the "tundu" system are all bound up together and inseparably connected; and as with regard to Coast advances the Association can do no more than recommend a certain course. This has frequently been done in the past and nothing more can be done but to repeat the recommendations in the hope perhaps that some day they may be carried out. It is impossible to say that local advances should not be given. Opportunity to change from one estate to another must be permitted to coolies as well as to others, and notwithstanding all that is said against the "tundu" system, in it properly used and not abused lies the best safeguard of the employer. Like all the other *panaceas* proposed for the evil, its complete success depends on its universal use. As its universal use cannot among the planters be hoped for, so its success can only be partial. No one can be compelled to give a "tundu" although many are under that impression, but it must be manifestly unfair to the labourer to refuse invariably and under all circumstances to give a "tundu" *if the system is universally adopted*. To enable an employer practically to prevent a coolie obtaining employment elsewhere would be unjust, and would have the effect of driving labour from the country. At present "tundus" are far too recklessly given and those with "tundus" as well as those without "tundus" are far too recklessly taken on.

Crimping is at present intimately connected with the "tundu" system but that is because the system is abused or improperly used. Nor is Crimping confined to coolies or kanganies alone. The Superintendent who at a day's or a week's or a month's notice tells his kangany that he the (Superintendent) must have more coolies, must be perfectly well aware that tho kangany can only get these by crimping.

The Superintendent who can foresee his wants and takes the trouble to calculate what these wants may be, sends to the coast 6 or 8 months before he really wants them and will be prepared to give them work if they arrive before he expected them. And this in fact brings one to the root of the whole question. The cooly is very much what his master makes him and there is far less change in the cooly than there is in some Superintendents of the day.

If a cooly is ill, he gets a letter to hospital. Some Superintendents neither know nor care what is the matter with him, in many cases do not even know them by sight! If there is a row in the lines they are told to settle it themselves or go to Court.

It is useless to attempt any remedy whatever until the adhesion is gained of certain lar e employers of labour whose visiting agents must be aware of the difficulties existing on many estates including their own. Until these large employers insist on their Superintendents procuring coolies from the coast annually and show them how to set about it, small individual proprietors cannot be expected to introduce new coolies on a scale large enough to remedy the evils, as if they did so the probable effect would be to enable the Superintendents of the large employers to recruit *their* force from such newly-imported coolies. It is desirable that Superintendents should show in their estate accounts what advances, given out in any month, are sent to the coast and what given for local labour, and tho number of coolies so obtained should be shown in the same way.

BOUND FOR NYASSALAND.

Mr. G. M. Crabbe, of Uva—who has had eight years' experience as a planter in Ceylon—and is in every way fitted to be a Central African pioneer planter, leaves for Nyassaland via Bombay, Zanzibar and Chinde, at once. Mr. Crabbe will be associated with Mr. Owen in the service of the Nyassaland Coffee Co.; and we feel sure will do justice to his selection. We trust he may have an enjoyable voyage across, arrive in good health on the Company's land and have a successful experience of Central Africa.

PROGRESS IN NORTH BORNEO.

From a letter dated Sandakan, 18th June, we are allowed to quote as follows:—

We have seen but little of Mr. Henry Walker for some months as he has been busy on the West Coast climbing mountain gorges and doing other laborious tramps. Here things are progressing though slowly, it is said that tobacco land is getting short and when the pinch comes then we shall begin to see the country go ahead on proper lines I hope. Our coffee comes on well, and gives every promise of dividends before long; it is already in heavy bearing.

THE CENTRAL TEA CO. OF CEYLON, LIMITED.

We have before us a memo of Association of this Company under The English Companies' Acts which is subscribed to by Messrs. J. Sancroft, Holmes. H. K. Rutherford, David Reid, H. Todd, W. Herbert Anderson, A. Crabbe and William Johnston.

The capital of the Company is £45,000 divided into 1,500 preferent shares of £10 each, and 3,000 ordinary shares of £10 each. Two estates—Somerset in Dimbula, and Kabberagalla in Matnrata—have been purchased by the Company for £38,750 sterling.

THE TRAVANCORE CARDAMOM MONOPOLY.

The Travancore Government has at last decided to abolish the cardamom monopoly against which the planting community has been agitating for years past. The cardamom gardens were all surveyed last year and a regular assessment will be fixed on each holding, which it is expected will amount to the average income obtained by the Government from this source. —*M. Mail.*

INDIAN TEA IN AMERICA.—Says the *Pioneer* of July 27:—The Indian Tea Association has just issued another circular to all proprietors and agents of tea gardens, appealing for further contributions (four annas per acre on area and half an anna per maund on produce) in support of the endeavour to push Indian tea in America. The measures adopted by Mr. Blechynden at the Chicago Exhibition seem to have borne good fruit, and the Indian planter may rest assured that the game is well worth the candle.

COLOMBO TEA TRADE REGULATIONS: THE CEYLON IMPORT DUTY OF 25 CENTS PER LB. ON TEA.

We direct attention to the full report of the proceedings at the meeting of the Colombo Tea Traders' Association, published on some of the following pages, which cannot fail to be of interest to planters both here and in India. In respect of the first two subjects discussed and the Resolutions eventually carried, we do not know that much need be said. It seems only right that the planters should mark the gross as well as the net weight on the boxes if this is specially desired by the buyers in Colombo; while as regards the strengthening of boxes in the manner suggested, we shall doubtless hear a good deal more from the planters in their several Association meetings. One cannot help thinking Mr. E. B. Creasy's suggestions on the subject, published by us the other day, well worthy the consideration of practical men in the tea-planting community, and the various opinions expressed yesterday will all help to a right decision on the subject.

We now come to the third and last subject of discussion—bearing on "Ceylon and South Indian tea,"—and arising out of a Memorial addressed to Governor Havelock by Mr. G. L. Yonge, Secretary, on behalf of the United Planters' Association of Southern India; and we may say at once that we are amazed at the reception accorded to the Memorial in a meeting composed mainly of merchants and brokers. We are quite aware of the prejudice which prevails upcountry about admitting the teas of Southern India on an equal footing to the Colombo market. It is an unjustifiable prejudice in our opinion, and more particularly so, seeing how Ceylon teas have invaded certain markets in India without a word of remonstrance so far as we are aware. But still planters may very well say:—"We do not want to increase the supply of tea for competition with our own in the Colombo market." That is an easily understood argument, although looking at the question in any broad light, it is not one that merchants or statesmen would usually regard.

On the other hand, however, one would expect every steamer agent, merchant and broker to view the matter in a very different light and at least to admit fairly and openly that it was to the advantage of the Colombo market and port to encourage the addition to the local public sales of all the teas of Tinnevelly, of South and North Travancore, and even of the districts beyond, should they find age.it to their advant But we cannot find that there was one at the meeting to advance this undoubtedly correct argument from the trading and business point of view. Now what is the explanation? We suppose it can only be that all present look at the matter almost entirely with the planters' eyes and as a matter of fact, the estate proprietary interest carries the day in the mercantile and broking circles of Colombo? Now, personally, our very limited interests are identical with those of the producers, and we are of those who, selling all their tea in Colombo, may be benefited, perhaps, by restricting the supply, and at any rate, by shutting out Indian teas from local competition. But is that a reason why as journalists, we should deal with this question after what seems to us, the illiberal and shortsighted fashion of the speakers at the meeting in question? We could scarcely believe our eyes in reading the remarks of the Hon. W. W. Mitchell, Chairman of the meeting, Mercantile representative in Council, one of our oldest merchants having close trading relations with Southern India; and yet he stands up to justify at this time the maintenance of a local *import duty of 25 cents per lb. on tea* because there is a *five per cent ad valorem duty in India!* Why, the Ceylon duty, as Mr. Mitchell and every one in the room knew well—though not one mentioned it—is equal to fully *fifty per cent ad valorem* on the average teas that would come to us from Southern India. Now, before we go further, we would ask: "Is it fair as a matter of ordinary justice between man and man to take advantage of the low duty to send all the Ceylon teas we can to India, and to refuse to reciprocate on an equal footing?" We could understand Mr. Mitchell if he argued: "Let the Indian Government raise its duty against Ceylon teas to 25 cents per lb.—we don't want in respect of tea, to have any dealings whatever with the opposite Continent." That would be conservatism worthy of Pekin; but it at least would indicate consistency, and a wish for equal dealing all round. *Fiat justitia ruat cælum.* Suppose, the Viceroy indicated in answer to the United Planters of Southern India, that unless the utterly prohibitory Ceylon duty were reduced, he would direct a similar rate of tax to be levied at all Indian ports, and especially Bombay, would Mr. Mitchell speak and vote as he did yesterday? And will any fair man amongst us say that Lord Elgin, on being told of this Colombo meeting, would not be justified in issuing some such ukase as we indicate?

But the Chairman had another argument: the planters of Southern India want to sell their teas in Colombo as their nearest market and Mr. Mitchell tells them, "there is no obstacle, you can do so in bond." Now, we are not up to the mysteries or technicalities of trading; but although the Chairman was allowed to indicate, *nemine contradicente*, that the complaint of South India teas being shut out from the Colombo sales "fell to the ground," we might well expect anybody interested in Travancore, had such been present, to act the part of one of Ingoldsby's well-known characters:—

> The Sacristan said not a word to indicate a doubt,
> But he put his thumb up to his nose and spread his fingers out!

Can sales be made in "bond" as favourably as in the open market in Colombo or is it putting South Indian teas on the same footing in our sales to have them in bond? Of course not; and therefore, surely, Mr. Mitchell trifled with the question at issue when he spoke of sales in bond. The issue was reached when reference was made to "blending" and it is a great pity we think that all reference to "bond" and an "Indian 5 per cent duty" was not left out, and an open avowal made at once that "tea planting opinion" in Ceylon was dead against Indian teas being allowed into the Colombo market to be bought, sold or blended on an equal footing with Ceylon teas, and that in deference to this feeling, the Chairman and the meeting agreed to oppose Mr Yonge's Memorial. That is, we suppose, the actual fact and if we proceed to ask for a reason for this feeling, must it not be somewhat as follows:—

> I do not like thee Dr. Fell.
> The reason why I cannot tell;
> But this I know and know full well,
> I do not like thee Dr. Fell.

For, can Mr. Mitchell or any other merchant or broker in Colombo, tell us in what respect the average Travancore teas differ from the average for Ceylon districts of the same altitude? Practically, the whole agitation circles round "Travancore" which as

a planting district, has from the very beginning been considered an outlying division of Ceylon. Its tea must be superior to a good deal of our lowcountry produce; for Ceylon it is well-known turns out some of the poorest as well as some of the best of teas and one or two parcels of "Ceylon's" (as the Chairman knows) have even been rejected by Customs authorities, a thing that we suppose never happened to Travancore tea. One more illustration of the extraordinary anomaly to which Mr. Mitchell would bind us: Travancore coffee and cardamoms can come without hindrance for sale to the Colombo market, where they can be blended or shipped as "Ceylon;" it is only tea that is to be shut out! Then again and finally, we were told not so long ago, that our tea duty was specially required to shut out Java and China teas, and that there would be no objection to Indian teas coming freely into Colombo; but yesterday, we do not find a single voice indicating such an opinion! What has led to this change of view in Colombo? We pause for a reply.

COLOMBO TEA TRADERS' ASSOCIATION.

A Special General Meeting of the Colombo Tea Traders' Association was held in the Chamber of Commerce Rooms yesterday afternoon at three o'clock. In the absence of the Chairman, the Hon. W. W. Mitchell, C.M.G., was called to the chair; and there were present:—Messrs. F. M. Mackwood, G. H. Alston, C. A. Leechman, E. Benham, A. H. Thompson, H. Tarrant, L. Davidson, W. Haslam, W. E. Drury and C. E. H. Symons, Secretary.

SHORT WEIGHTS OF PACKAGES.

The Chairman said that the present being a special meeting there were no minutes to be read. He proposed that the meeting should therefore proceed to dispose of the business on the agenda. The first resolution was as follows:—

"To consider the following proposed addition to rule 8 of the present Sale Conditions:—In order to afford to buyers of tea a partial check on the weights of packages, it is proposed to add to clause 8 *all packages to have the gross weights marked upon them.*"

This resolution, he said, had been prepared by the Committee as a result of complaints, which had been very frequent of late, of weights turning out to be short—that was complaints of packages not turning out to be such as to correspond with the weights buyers had paid for. A number of instances had been brought before the Committee of the Association lately. Complaints had been laid before them where very serious discrepancies were shown to have taken place and the complaints were supported by the weights from the London Warehouses, showing the Customs weights, and affording proof that the packages did not contain the quantities that had been paid for. The Committee on various occasions, when these instances were brought before them, afforded the best advice which, in their opinion, they could give to these persons who brought the complaints before them. But as the outcome of it, all the Committee thought that, it would be well if some means were devised to enable buyers to check weights when taking delivery from the sellers' go-downs. At present, under clause 8 of the conditions of sale, it was stated "to ascertain actual net weights 10 per cent of each break, but not less than three packages to be turned out and weighed, and the average result taken as representing the actual net weight of the tea in each package of the break,"—so that when a buyer went to take delivery of tea from a seller's go-down it was practically impossible to give effect to this. Clause 8 of the conditions of sale was therefore practically a dead letter. Buyers generally—at least a good many—took teas to the godown and there weighed them and then turned them out to ascertain whether they contained what they were represented to contain. They could not very well comply with the terms of condition No. 8 and it was in order to enable them to have some practical check that the motion had been brought forward. to require that all packages should have the gross weights marked upon them. If they had this, the buyer could, on taking delivery, pass a few packages over the scale and see whether the weights corresponded with the gross weight marked on the packages, and, if there was a discrepancy, to there and then draw the attention of the seller to it. He thought that was a very reasonable request. Some Superintendents of Estates marked both the gross and the net weight upon packages. They had, of course, to mark the net weight—they need not necessarily mark the tare—but if they gave the gross weight it would afford an opportunity for checking to some extent the weight of packages and to see whether the man's scales in the factory were correct or not. No one, of course, had any desire to pass off short weights, but at the same time weights and scales would get out of order and the resolution would enable them, on receipt of a complaint, to see where the weights were wrong. It was not asking anything unreasonable, and therefore he begged to propose the resolution.

THE GROSS WEIGHT SYSTEM.

Mr. Mackwood said he had great pleasure in seconding the resolution, and it would be only reasonable, to give effect to the motion, if they asked the brokers, when printing their catalogues to state the gross weights of the packages offered. It was a great assistance to know that teas were bulked, and also an advantage to know that packages were hooked, and, he thought, that while it might not lead to increased bidding it would lead to bidding with more confidence if the gross weight were marked. He had all the more reason in supporting the resolution because he had himself been for the last three or four months considerably worried and troubled over this question in both capacities,—as a buyer, in having to get allowances made him, in some cases satisfactory and in others, unsatisfactory, and as a seller he had had the same trouble. Rule 8 as it at present stood absolutely debarred any man from making a claim in respect of tea if he had taken it out of a go-down. The rule was neither conducive to kindly feeling in the town nor to the advance of business. As a rule they could only send in claims to the man who knew all about the matter and the only man who was in a position to tell was the man on the estate. As things at present stood it was largely a matter of courtesy whether a seller would make a refund for shortage or not. He asked what could a buyer do supposing his claim was objected to. He could not go against an assurance by a man he had known for years and in whom he had the utmost confidence. He was of opinion that the gross weight system would help them very much. On the other hand, as regarded claims, he thought a line should be drawn somewhere as some of the claims were really frivolous. He had one before him at present. His firm recently sold 5 chests of tea that were probably not weighed in Colombo. They weighed it and it was found deficient according to the customs weights, to the extent of 5 lb. and a claim was made accordingly. With all the care that was taken in factories, trifling mistakes were likely to occur. This was a sub-

ject in which he took a deep interest. He had always passed a loss of weight when it did not exceed 1½ per cent and he always expected to buy with the risk of such a loss. His personal opinion was that any claim made for one per cent, in view of the Customs' allowance and the rules of the trade, was simply frivolous.

THE USE OF THE SCALES.

Mr. Alston concurred generally, mentioning instances in his own experience where short weights had been discovered and where much trouble would have been avoided had the gross weight been marked on the boxes.

The Chairman spoke of a similar case which occurred last week, where if they had had an opportunity of passing the packages over the scales and comparing with the gross weight they would have been able to detect the shortage at once. As regarded Mr. Mackwood's suggestion as regards the brokers' catalogues it seemed to Mr. Mitchell that marking the gross weight on the packages became a condition of sale so that the suggested course would have been necessary.

Mr. Mackwood said he was all the better pleased, and remarked that if they did not meet each other in a fair and honest way and declined to come in, the men who stood aloof would suffer in the long run.

Mr. Symons pointed out that a considerable time might elapse before the purpose of the motion came into operation, and in the meantime the brokers should state it in the catalogues.

Mr. Alston:—If we make a condition of sale we must name a day on which it is to begin so as to give people a reasonable time.

Mr. Mackwood:—It is absolutely no trouble.

Mr. Thompson:—Notice should at once be given.

Mr. Leechman suggested the 1st October.

Mr. Mackwood was of opinion that there was no necessity for delaying so long. He mentioned 1st September as the date when it should come into operation. So far as a date went the men who were willing to come in would do so at once.

The Chairman suggested that the words "to take effect from September" be added.

The motion with this addition was then put to the meeting and carried unanimously.

COMPLAINTS FROM OVER THE SEAS.

The Chairman said the next resolution was:—

"That in view of the numerous complaints of shortness in weights of contents of packages of tea it be urged upon Planters that in the interest of the grower as well as the buyer, it is important that greater regularity and accuracy in weights should be observed."

The Committee, observed Mr. Mitchell, had had a good many complaints from over the seas. The following was received the other day from Australia as follows:—

"*Weights.*—We have had a lot of trouble with our Customs regarding the irregularity of weights and with very few exceptions we find that the weights marked on the packages are in excess of actual contents. Now this is a most serious matter, and as it entails in some instances the opening of every package it naturally much depreciates the value as you can well imagine; we therefore think that it is an important point for you to bring before your Chamber of Commerce for unless something is done to overcome this serious discrepancy of weight, Ceylon Teas will undoubtedly get a bad name in our market, solely on this account and it will mean a heavy loss to importers, for buyers are only too anxious to take advantage and make claims specially when they know that it can be proved on examination."

He did not think the resolution needed much discussion. The above was not the only letter on the subject which had been received. He merely took it as a sample of the lot that had been forwarded from different parts of the country. They could do nothing more than pass the resolution as an expression of opinion by the Association and with the view of impressing upon Planters and Superintendents the necessity for greater accuracy.

Mr. Mackwood supposed that in a good many cases all necessary care was taken. They had to recognise that Planters had a great deal of difficulties to contend with. His tea-maker might be dishonest and by wrong initialling, try to represent a larger quantity, than there really was. They had to deal also with a certain amount of moderate carelessness. For himself he thought where a good deal of the trouble arose was from the machines not being tested periodically.

The Chairman:—Weighing machines?

Mr. Mackwood:—Yes.

Mr. Symons remarked that the former resolution would come in and check that.

Mr. Mackwood, (continuing) said on the other hand there were certain eccentricities in tea which it was impossible to trace back to the factory. Last year amongst several other lines of tea his firm bought from 2,000 to 3,000 lb. for the Canadian market. To suit the purpose of their client they repacked the tea at Colombo at Messrs. George Steuart and Co's. Mills and the up-country man's weight was found to be perfectly correct, yet when the tea was sent to Liverpool for transhipment to Canada it was found to be four per cent. short.

The Chairman:—Do I understand you to second the resolution?

Mr. Mackwood said he would second the resolution to be in order, adding that he had never been enabled to get behind the cause of the discrepancy he had mentioned.

The Chairman:—I shall be glad to hear the experiences of any other gentleman. It is a matter of importance and unfortunately we all know it only too well.

The resolution was then put to the meeting and carried unanimously.

FAULTY TEA PACKAGES.

The Chairman submitted the following motion:—

"That in view of the fact that Ceylon tea is now, much more than formerly, distributed to all parts of the world the transit involving in many cases more than one transhipment the half inch Ceylon wooden planks at present used for tea chests are in the opinion of this Association insufficient for the weight contained in them and they consider that planks of at least ⅝th of an inch should be used."

This motion the Chairman proceeded to say was brought forward to some extent with the view of eliciting an expression of opinion from the members of the Association. Some, he knew considered half-inch planks were sufficiently thick, other members that packages ought to be of a different shape, while others considered they are not sufficiently thick. The last was his opinion, for, he had seen again and again packages coming down to Colombo altogether insufficient for the carriage of tea. After they had been delivered and nailed up after being opened he had known many instances where they were not fit to go the length of the Port.

Mr. Mackwood:—Are you sure that they were made of half-inch wood?

The Chairman was understood to reply in the affirmative, and, proceeding, he said they would have imperfect planks now and again: but he could not help thinking that if planks were more than ½-inch that that would go a long way to meet the difficulty. If they were a little thicker

that would provide a margin for imperfect planks. If the planking was thicker it stood to reason that it would stand better. Nothing had been said about imported packages of more select wood from Japan. He did not think the motion would apply to that. Perhaps others who knew more about the subject would say something about it. If, at all events, wood a little thicker were used, tea would have a much better chance of reaching its destination in better order, than at present. It might be said that the China packages were very thin. That was true but they were bound with rattans and being flexible were able to stand a great deal more knocking about than their Ceylon packages. Indian packages he thought, were of the same thickness, but he was not competent to speak on the subject and would be glad of information. As members knew, a great deal of Ceylon tea was subject to transhipment and that was increasing because more tea was going to the United States and Canada. The half-inch packages such as they get from upcountry were altogether insufficient to bear the strain. The half-inch hoops put on at present were useless. In many cases before reaching Colombo the hoops were torn off and thus served no purpose. He should be very glad to hear an expression of opinion on the subject.

Mr. BENHAM seconded in a few words.

Mr. MACKWOOD differed. He was of opinion that half-inch planks were sufficient, as regarded momi packages, and sufficient for country made packages providing these were covered with Jute hessian. Of course this only applied if the wood was properly seasoned and there must be no mistake in substituting wood ⅝ of an inch thick for ½-inch wood. The majority of them packed their teas presumably for transhipment. The tea went out of the Southern Ports of the Island and the question arose whether the man upcountry had to bear the cost of ⅝-inch packages, which after all might not be necessary, or whether the buyer had to bear the cost. Jute hessian and a half-inch planking would stand any amount of knocking about and the cost of it would be cheaper.

Mr. ALSTON said he had tried covering packages with gunny. He had had to fight against the Company and only sometimes had he succeeded in getting claims paid. When gunny was used the shippers said "We can do what we like with it" and they tumbled it up till tea, wood and lead were all mixed up together and then they handed it to the consignee like a carpet bag. (Laughter).

Mr. MACKWOOD:—That is not condemnatory of the form of package. It is condemnatory of the bad usuage.

Mr. DRURY said that, taken all over, there was nothing much to complain of and the boxes as used at present stood a fair amount of knocking about. The experience of his firm was that country-made packages, in many cases, were very bad indeed, particularly after they had been sampled, when the nails were apt to split them.

Mr. ALSTON suggested that "Country-made packages" should be specified in the motion.

The CHAIRMAN replied that there was no objection. Proceeding he went on to say that Mr. E. B. Creasy had written to the Association on the subject. That gentleman's letter had already been published in the newspapers. He suggested, instead of altering the thickness of the wood that it would be better to make the packages of a different size 20½ × 20½ × 20½—perfectly square, and they would then carry very much better than at present. Probably that was correct.

Mr. MACKWOOD remarked that that was a matter for planters If they liked in sufficient numbers to adopt it there would be a supply to meet their wants.

The CHAIRMAN said it was very difficult to nail up again, a plank that was only half an inch thick. The motion was merely an expression of opinion. They could not force planters to adopt the course proposed. It was for them to follow it out if they chose.

Mr. MACKWOOD said that it should be left to planters to deal with accordingly to supply and demand. If they were going to express an opinion that 20½ inches cube would be preferable—

The CHAIRMAN.—We do not do that. Do you move an amendment?

Proceeding, Mr. MACKWOD said he did not. The fault of most of the wood—not all—was inherent, that was, a tendency to split, and so far as that point was concerned he could not see ⅝-inch Ceylon wood was any better than ½ inch. He had not sufficient knowledge of the structure of the wood, but he understood it was this splitting tendency that was to blame.

Mr. DRURY said it was difficult for a person who had no experience to give advice. It seemed to him that two things had to be guarded against, splitting and, very often, the coming asunder of the joints.

Mr. MACKWOOD:—That is want of seasoning.

After further discussion Mr. Mackwood suggested that the better way would be to refer the matter to the Planters' Association with the view of eliciting their opinion.

The motion was put to the meeting and carried unanimously with the addition "that the experience of the Planters' Association in this subject be solicited."

THE DUTY ON INDIAN TEA.

The CHAIRMAN intimated that the Secretary had been addressed by Government with reference to a memorial by the United Planters' Association of Southern India with the view of being furnished with the views of the members. The memorial was as follows:—

To His Excellency Sir Arthur E. HAVELOCK, G.C.M.G., Governor of Ceylon, Ceylon.

Your Excellency,—I have the honour to address you on behalf of this Association regarding the import duty on Tea now in force in Ceylon.

I am directed to point out that whilst the tax, which has now been in force for several years, is quite, unremunerative to the Revenues of your Excellency's Government, it operates very injuriously against the interests of Tea Properties in Southern India.

Ceylon possesses a market for teas from which all those of Southern India are shut out owing to the existence of the import duty and this Association ventures to urge the repeal of the Act imposing this duty not only in the interests of the Planters of Southern India but also in those of Ceylon itself.

The Association would respectfully advance the opinion that whilst no possible injury would be inflicted on the local market by the abolition of the duty a considerable impetus would be given to the tea industries of both countries.

It is well known that both for the London and the Colonial markets each of the teas finds a ready sale when blended and it would be a distinct advantage to both countries if the blending could be performed in Ceylon instead of at the various Ports of sale.

I am further directed to point out that the natural market for South Indian teas is Colombo and, the larger the quantity attracted thereto, the better for Ceylon.

Ceylon is in no way benefited by the exclusion of Indian teas as the latter is naturally absorbed at the various Ports in any case.

In conclusion I am to ask for your Excellency's best consideration of the prayer of the Association, and

I have the honour to be your Excellency's obedient and humble servant, G. L. Yonge, Secretary.

The Chairman remarked that the two salient points in the letter were first of all in regard to the sale of teas grown in Southern India in the Ceylon market, and secondly, as to the advantage or otherwise of their blending the teas. In regard to the former there was nothing to prevent the Planters of Travancore selling tea in Ceylon in bond as they had done before, so that fell to the ground. As to the advantage derived from blending, he thought, most of them would agree with him that they would much rather not have any teas blended with their Ceylon teas. (Hear hear.) What they had always prided themselves on was that their teas were pure and were not mixed with anything whatever that would cause them to be looked on with less favour. To abolish this duty would be to do away with the only safeguard preventing such a thing from taking place.—(Hear, hear.) If tea was let in from Southern India it would be mixed up with their Ceylon teas and sold, perhaps not labelled as "Pure Ceylon tea." but sold as "Ceylon tea." There was no possible advantage to be gained by their abolishing the duty and he strongly recommended the Government to continue the import duty against the very thing that these gentlemen recommended. (Hear, hear.) They could not now complain that in India they did not pay a duty on Ceylon tea, for 5 per cent. was levied in India.

Discussion took place as to whether the matter could competently be discussed, seeing it was not on the agenda.

The Chairman decided in the affirmative remarking that while there was no intention to push the matter he did not see any harm in passing a resolution.

Mr. Mackwood held the opinion that the Committee might be authorised to reply to the letter very much in the terms indicated by the Chairman. He was prepared to go very much further than Mr. Mitchell. If there was one problem staring them in the face it was the scarcity of markets for their plentiful supplies. To do what was proposed would be to add to their own natural increase some unknown millions of pounds of tea. He moved "That the opinion expressed by the Chairman that the duty on teas imported into Ceylon should not be repealed has the unanimous approval of this meeting and that he be asked to convey the same to the Chamber of Commerce.

The resolution having been duly seconded was carried unanimously.

The Chairman suggested that it should be circulated to all members of the Association so that those who were absent might receive official notice of the discussion.

Mr. Leechman remarked that this course of procedure would strengthen the hands of the Association in replying to the Chamber of Commerce.

The meeting adjourned shortly after four o'clock, a vote of thanks having, on the motion of Mr. Mackwood, been accorded to the Chairman.

LOCAL TEA SALES AND SALES LISTS.

A Kelani Valley planter writes to the *Observer*:—

"Considering the large quantity of tea now disposed of in the local market, I think it would be an improvement, if you were to issue the local sale list, as a *Supplement* of a convenient size for filing; and arranged in the same way as G. W. and S's London circular; *i.e.* with the Estates in alphabetical order, and the prices for the different grades of tea printed in columns. This would make it very much easier to compare the prices realized by different estates in the same district; and one would see at a glance if any estate in which one was interested, was represented or not. Should you not care about making the alteration, perhaps some of the brokers might adopt my suggestion.'

Does our friend know the *Tropical Agriculturist*? In it he will find both local and home tea sales bound up each month in the convenient size he desires, though not alphabetically arranged in the case of local sales. Were it only for the convenience of easy reference to these sales, a practical Visiting Agent has said that every Tea Factory in the country should file the *T.A.*

"MODERATE CARELESSNESS" IN THE TEA FACTORY

At the meeting of the Tea Traders' Association, carelessness at the Factory, was stated to be one of the chief causes of these shortages, which not infrequently, lead to so much trouble. Mr. Mackwood, recognising the evil, makes allowance for "moderate carelessness." I wonder if the following *facts* can be included under this category :—Some time ago the representative of a well-known firm of buyers went Upcountry on pleasure bent. At a tennis party he was introduced to a planter, who in a burst of confidence told how keen he was on tennis saying :—"I have not seen a coolie for a week and I haven't been inside the factory for three weeks!" Curiously enough, about this time, the firm whose representative was tennis playing Upcountry, had occasion to make a claim for shortage on the identical planter who "hadn't been in the factory for three weeks." As is usual in such cases correspondence passed between the parties, and when the tennis-playing tea buyer had returned to his desk he received a letter stating that it was impossible that there could have been any shortage as the weighing and sending out of the tea were *invariably* done under his (the Planter's) personal supervision. A reminder of the tennis party and the conversation thereat resulted in a cheque being received by return. —*Cor.*

BATAVIA NEWS.

The *Batavia Nieuwsblad* says that the plantation called "Tjiseureh" on the "Gedeh," belonging to the "West Java Cinchona Company," has been purchased by Messrs. Mundt and J. C. Vanson. This plantation, covering an area of about 1,400 acres, will be planted with tea.

A new line is being laid between Buitenzorg and Bandong in order to expedite communication between Batavia and Semarang. The cost of this line is estimated at fl. 6975.

A concession for Pearl Fishery in the territorial waters of the Islands about the Lampong districts, in the Sunda Straits and Semangka Bay, has been granted to Mr. Steenstra Toussaint.

The *Batavia Nieuwsblad* is informed that the Cinchona Company "Kertamanah" (directors Messrs. Tiedeman and van Kerchem) at Batavia at the last meeting of shareholders resolved to buy up a lot of shares in the new Java Cinchona Company which will soon be established here.—*S. F. Press*, July 16.

Liberian Coffee in the Straits.—"Edinburgh" is the name of the latest addition to European-owned estates in Selangor; it is situated at Kepong, and will be opened up with Liberian coffee by Mr. Dougal.—*Pinang Gazette.*

INDIA PATENTS.

CALCUTTA, July 11.

Applications in respect of the undermentioned inventions have been filed, during the week ending 6th July 1895, under the provisions of Act V of 1888:—

For "The Killum-right, or Giant Blight Destroyer." —218 of 1895.—Daniel Powell, of No. 2 Bolton Road, Newport, in the County of Monmouth, in England. Gardener, for "The Killum-right or giant blight destroyer."

Specifications of the undermentioned inventions have been filed, under the provisions of Act V of 1888.

For improvements in the extraction and preparation of the fibres of rhea and other grasses and fibrous vegetables.—115 of 1894.—Henry Cecil Fellowes, of Leadenhall Buildings, 1, Leadenhall Street, in the City of London, England, Merchant, and William Robert Crozier, also of Leadenhall Buildings, 1, Leadenhall Street, in the City of London, England, Merchant, and Henry Ferguson, of 60, Ranelagh Road, Leytonstone, late of 10, Cleveland Terrace, Ranelagh Road, Leytonstone, in the County of Essex, England, Engineer, for improvements in the extraction and preparation of the fibres of rhea and other grasses and fibrous vegetables. (Filed 1st July 1895.)

For improvements in and connected with beating apparatus employed in opening and cleaning cotton and other fibres.—375 of 1894.—August Kirschner, of 19, Rue Cambon, Paris, in the French Republic, Engineer, for improvements in and connected with beating apparatus employed in opening and cleaning cotton and other fibres. (Filed 1st July 1895.).—*Indian & Eastern Engineer*, July 20.

PLANTING NOTES FROM COORG.

COORG, July 15.

A sad event has occurred in the Bamboo, which has cast a gloom over the community there. Mr. Bell, a long-resident planter who was highly respected and esteemed, passed away on the 2nd instant and was interred the next day in the new Protestant Cemetery in the precints of the new Bamboo Church.

THE ATTEMPT TO RAISE LIBERIAN HYBRIDS IN COORG.

AN UNSUCCESSFUL VENTURE.

It will not be out of place here to notice the non-success of Mr. Brooke-Mockett, the well-known Mysore planter, to raise many hybrids like the chance hybrids he has in his Liberian field. It was said at one time that he had a lot of seed like what he thought had produced the hybrids in question, which are a cross between the Liberian and Arabian species. The seed was sown, but after the resulting plants had been planted out and had grown up, it was found that although some of them bore some resemblance of the parent trees, there was marked degeneration. To those who knew anything of the matter, the result to the experiment was only to be expected if the seeds, as was most probable, were taken from the hybrids. The why and the wherefore of this is easily made clear. It is well-known that hybrids only bear heavily when their flowers are fertilised by the pollen of one of the parents, *i.e.*, if we have a hybrid between a Liberian and an Arabian coffee true, in order that it may bear well and that its seed may be fertile its flowers must be fertilised by the pollen from either an Arabian tree or a Liberian or from both; but then it must be abundantly clear that the plants resulting from such seed cannot possibly be true hybrids; they would bear a stronger resemblance to, and have more characteristics in common with either the Arabain or Liberian *jât* than to their immediate parent, the hybrid, according to which pollen it was that fructified the flowers of the latter. It is said that Mr. Brook-Mockett was offered as much as R1,000 per bushel for his hybrid seed, but he declined the offer. He would have made a good thing out of it if he had accepted it, but the purchasers would have been dreadfully "sold." I am aware that some of this has appeared in other papers, but the importance of what is here contended for does not appear to have been generally appreciated, so I trust it will prove interesting to your planting readers. Each hybrid is the result of the fertilisation of the flowers of one species by the pollen of another, and not the flowers of the hybrid itself by either its own pollen or the pollen of another species.—*M. Times.*

IMPROVED TEA MACHINERY.

Mr. J. R. Dalgarno, representing Messrs. Jackson's Patent Tea machinery, is once more in Ceylon and as usual he comes to introduce something new and an improvement on all its predecessors. One of the latest of Jackson's tea-drying machines is the "Paragon," a specimen of which has been erected on Labukelle estate, Ramboda, and another on Diyagama estate, Dimbula, drying from 350 to 390 lb. of tea per hour. The special machine under notice this time is the "Chota Paragon," a self-contained and very useful machine equal to from 160 to 200 lb. per hour and very compact, inasmuch as it occupies no more than 8 by 16 feet of floor space; while the consumption of dry wood fuel is equal to about ¾ lb. the lb. of dry tea. One of these machines has just been erected on Great Western and gives special satisfaction to so good a judge as Mr. Mackie. Among the improvements introduced into this machine are the following:—

1. In this new air-heater the tubes are placed *across* the Stove and the furnace bars. The first two vertical lines of tubes are pushed in and locked from one side of the Stove; the next two vertical lines from the opposite side and so on; so that half the cold air enters from one side of the Stove and half from the other, and is delivered uniformly heated along the two sides of the Stove, no matter how the furnace bars may be covered with fuel.

2. The drying chamber is placed on the top of the air-heating Stove in this machine, and special notice is directed to the fact that the hot air by this arrangement of Stove is admitted to the drying chamber *along the two sides and one end of it*, thereby ensuring the most uniform distribution of heat all over the drying surfaces, and a consequent increased drying effect and economy in fuel. By this arrangement *all* heat generated from the Stove must pass up through the drying chamber, which still adds to economical working.

3. The drying chamber being elevated to the top of the Stove provides for a great improvement in the discharge arrangement, which is now 3 feet above the floor level.

The drying chamber is fitted with 4 slow moving drying surfaces, the chains carrying these having motion imparted to them one independent of the other; so that each of these having the strain of only one travelling web on it will run for years without any special attention. A slow moving short feed travelling web is provided for the attendant to scatter the leaf on. The travelling webs can have 5 different speeds imparted to them, and the velocity of the air can be controlled for drying heavy and light teas.

We have no doubt that very considerable interest will be taken in Ceylon in this new machine, by the owners of estates who require an Automatic Dryer, and yet cannot afford any of the larger ones. The manufacturers of the machines are Messrs. Marshall Sons & Co., Ld., Gainsborough.

COFFEE PRODUCTION AND COSUMPTION.

To a Ceylon planter who is specially interested in "Coffee" we are indebted for the following interesting information and estimates in reference to the future production and consumption of our old staple. The figures and prognostica-

tions will no doubt be closely scanned by all who are looking to coffee as the safe product of the future:—

Extract from "The Export World and Herald" (published by Flint, Eddy & Co. New York) dated 29th April 1895.

Coffee.—As the question of the future value of effee is very interesting to many of our readers, we publish below an article prepared by a gentleman long familiar with foreign commerce in this article, The whose opinions cannot fail to be interesting. men problem is a very complex one, and the argu- and ts in favor of his views are certainly most strongly put.

The idea prevailing in some quarters that ruling vaues of coffee are too high, because there has been a large shrinkage in the price of nearly every other product, is entirely wrong if values are governed at all by supply and demand. We purpose showing in this article that the consumption of coffee throughout the world has been and is steadily increasing, while the supply continues almost without appreciable change. There can therefore, be no permanent decline if any, in the price of coffee, unless the yield of several consecutive crops be in excess of yearly requirements. Our figures show that the consumption and production are almost equalized. The stocks in all countries, about the middle of the present year will probably show very little difference as compared with the same period of the preceding year, while during the season of 1895 to 1896 the visible supply will be smaller.

A careful study of coffee statistics enables us to present the following data which, we are sure will be interesting to our readers in coffee producing countries.

The production of the world in 1893-1894 was 9,110,000 bags, and careful estimates show the probable yield in the following years will be: 1894-1895 11,120,000 bags. 1895-1896 10,260,000 bags, divided as follows:—

	1893-94.	1894-95.	1895-96.
Africa, Mocha, etc. ..	150,100	199,000	200,000
Ceylon ..	26,300	38,000	39,000
Hayti ..	426,200	398,000	448,000
Java ..	433,100	799,000	750,000
Menado ..	5,000	1,000	4,000
Padang ..	89,700	47,000	50,000
Macassar, Timor, etc. ..	30,000	42,000	39,000
East Indies and Manila	270,000	250,000	298,000
Central America and Mexico ..	1,466,300	1,249,000	1,348,000
Colombia and Venezuela ..	1,206,900	800,000	1,000,000
West Indies ..	185,800	200,000	224,000
Bahia ..	365,000	300,000	350,000
Santos ..	1,767,000	4,000,000	3,500,000
Rio, Victoria and Ceara ..	2,697,000	2,800,000	2,000,000
Total ..	9,110,000	11,120,000	10,260,000

The Consumption of Coffee in 1894 was 11,350,000 bags, as follows:—

	Bags.		Bags.
United States ..	4,300,000	Asia Minor ..	65,000
France ..	1,140,000	Spain ..	100,000
Belgium ..	390,000	Portugal ..	35,000
Germany ..	2,110,000	Egypt ..	85,000
Austria ..	600,000	Bulgaria ..	15,000
Canada ..	25,000	Sweden ..	280,000
Great Britain ..	205,000	Norway ..	150,000
Switzerland ..	135,000	Pacific Coast ..	145,000
Denmark ..	120,000	Holland ..	520,000
Italy ..	200,000	Australia ..	335,000
Turkey ..	140,000	Russia ..	200,000
Roumania ..	25,000	Greece ..	16,000
Servia ..	14,000		
		Value over 30 million stg. ..	11,350,000

While the production is subjected, from natural causes, to frequent fluctuations, the consumption has been continuously on the increase as may be verified by consulting the tables of deliveries in the United States, France, Belgium and Austria, which show that, from the year 1867, when the aggregate average yearly deliveries amounted to 4,200,000 bags, they have gradually but constantly increased, until at the close of 1894 they footed 9,520,000 bags, this being more than double in the comparatively short space of 27 years.

A greater increase has been shown in the average annual consumption per *capita*, of coffee in the United States, than of almost any other article. except sugar, that of coffee having increased from 5·01 pounds in 1867 to 8·25 pounds in 1893. This is largoly attributed to the improved methods of preparing coffee for retailing which presents it to the consumer in more convenient form than was the case several years ago.

The outlook, therefore, would seem to be for at least stationary values for some time to come. The figures given here certainly prove that present prices, rather than being fictitious, as some would have them appear, are in reality on a sound commercial basis.

THE RUSSIAN GOVERNMENT AND INDIAN TEA.

The Russian Government has lately removed the prohibition that has hitherto existed on the importation through Batoum of Indian teas intended for places in Central Asia. Until now this trade has been carried on through the ports of the Persian Gulf, but since the new decree has been issued it is being sent from Bombay to Port Said for transhipment there to Russian steamers proceeding to the Black Sea.—*M. Mail.*

PLANTING AND PRODUCE.

Tea Companies' Shares as Investments.—Under this head thore was an article in a recent number of the *Economist*, together with a table showing the dividends distributed of the principal companies, the past and present market valuation of their shares, and the yield obtainable on the basis of last year's distributions. Says the writer in the *Economist*: "In view of the constantly diminishing return obtainable upon 'giltedged' securities, on the one hand, and the heavy losses sustained by investors in some other classes of Stock Exchange issues, on the other hand, it is scarcely to be wondered at that the shares of several varieties of industrial undertakings have grown steadily in public favour. . . . There can be no doubt, indeed, that the tea cultivating industry in Assam and Ceylon has been placed upon a thoroughly sound basis, with the result that so far at all events, as the United Kingdom, is concerned, the Chinese article has been practically beaten out of the field. In India tea planting has been going on for about fifty years, and at present about 380,000 acres are under tea cultivation, representing a capital of something like £15,000,000; while in Ceylon, where the industry dates back for only fifteen years, 280,000 acres are at present under tea, representing a capital of about £11,000,000. The fall in the value of silver, tho introduction of machinery, and improved means of communication have, of course, greatly assisted the development of the tea estates in India and Ceylon; but when the fullest allowance is made for these advantages, the displacement of the Chinese supplies in our markets has been not a little remarkable. Naturally the supersession of the Chinese commodity has been accompanied by a very great reduction in the market values of tea, the decline in the past ten years having averaged about fifty per cent, but the reduction in the cost of production has more than compensated for the fall in price. Tho Indian and Ceylon companies have, therefore, been making larger profits of late, as a rulo, last year's results having been benefited also by a slight improvement in the average price realised. Until quite lately, indeed, dealings in many of the Indian and Ceylon tea shares were matters of private negotiations, but gradually the efforts of some of tho people largely interested in the industry to create a market for the shares are meeting with success."

The Position and Prospects.—The *Economist* then sums up the outlook as follows: "Beyond the essential facts concerning individual Companies, which investors can readily procure for themselves, there are two or three features in the po·ition and prospects of the Indian and Ceylon tea Companies as a whole which call for some remark. In the first place, it has to be borne in mind that hitherto the Indian and Ceylon planters have not only been able to supply the normal increase of consumption in this country, but they have also provided for the gradual displacement of the Chinese commodity; in future they will have to depend mainly upon the first of these factors for increased sale here, for it is not at all probable that the consumption of China teas will go altogether out of favour. It is obvious, therefore, that India and Ceylon will have to secure fresh markets for their constantly increasing production. At present the great bulk of the tea grown in both countries is shipped to the United Kingdom. Last year, for example, out of a total export from Calcutta of 125,446,000 lb, 116,083,000 lb. came to this country, while out of 84,592,000 lb. shipped from Ceylon 75,350,000 lb. were for the United Kingdom. Australia and New Zealand are the next largest customers, taking over 12,000,000 lb. from the two sources of supply; but other important markets require to be established if Indian and Ceylon tea is to command remunerative prices. Strenuous efforts are being made to foster a taste for British-grown tea in the United States and in Russia, and it is said that the prospects in both directions are encouraging; and in the trade it is thought that the expenditure of a little energy and a little money by the Indian and Ceylon tea planters would suffice to open up many other channels for their produce. The area of cultivation is being constantly increased and it is obvious that if fresh markets are not found there will be a tendency towards over-production, and a consequent reduction in prices. In the second place, skilled labour is becoming scarcer and more expensive both in India and in Ceylon, and as the new areas which have been planted in recent years begin to bear, the labour difficulty may increase. This, however, would cut both ways, for if labour becomes scarcer the tendency to over-production will naturally be checked. In the near future there is not likely to be any great increase in the outturn of tea either in India or in Ceylon, for it is one thing to open up new areas, and quite another thing to bring them to fruition. The only other point to notice is the value of silver and its effect upon the tea-planting industry. That the low price of the 'white metal' has been of great benefit to tea planters is indisputable, and it is equally obvious that any sudden and important rise in the value of silver would be prejudicial to the Indian and Ceylon industries, as it would diminish the purchasing power of the metal as measured in gold. That, in the opinion of the bimetallists, is 'a consummation devoutly to be wished,' but probably the tea-planting interest would regard such a movement with much less favour. It is scarcely worth while, however, to discuss the problematical effects of an international agreement which is never likely to take place, and without such an agreement no such rise in the value of silver as would materially affect the tea industry is at all probable. The outlook for the Indian and Ceylon tea companies is, therefore, generally satisfactory, though it is tolerably clear that the fears of over-production will only be removed by the success of the efforts which are now being made for the opening up of new markets, and the vigorous development of existing ones."

Tea Tabloids.—In an official report of a tour by Mr. W. R. Hearn* through the German and Italian colonies in the State of Rio Grande, Brazil, Mr. Hearn reports on his visit to one of the principal inns, where the accommodation and food were extremely bad, and adds by way of consolation: "Luckily we had with us a supply of tea tabloids, so that if the resources of a dwelling consisted of nothing more than a tin of hot water, we could always be sure of a refreshing cup of excellent tea." Messrs. Burroughs, Wellcome and Co., the manufacturers of these tabloids, have conferred a great benefit on travellers by thus enabling them to carry their tea about with them.—*H. and C. Mail.*

* Who will be remembered when in Ceylon.—Ed. *T.A.*

QUININE-MAKERS AND THE CINCHONA SUPPLY.

We announced some time ago that Dr. Buchler, of the Brunswick Quinine-factory, was now in Java for the purpose of inquiring into the condition of the cinchona-industry in that island. It appears that Dr. Buchler is the delegate of the combined German quinine manufacturers, and of Messrs. Howards & Sons, and in that capacity has made proposals to all the cinchona-planters in Java to make a contract for the purchase of their bark for a period of five years. The manufacturers propose to pay a fixed price of 6c. per unit per half-kilo of bark, and in addition to that to allow the planters one-half of the profit on all sales of sulphate of quinine above 24fl. per kilo, which is equal to about 1s 2d per oz. The Java cinchona-planters on their part would have to agree, severally and jointly, not to supply more than one-half of 235,000 kilos of quinine in the bark, these figures being estimated as the total annual consumption of the world. This would reduce the shipments of bark from Java to about one-half of their present quantity, the total exports from the island in 1894 having been equal to 211,750 kilos. of sulphate of quinine. Under the arrangement the German and English manufacturers together would monopolise the whole of the bark supplies in Java, consequently the American and French markets would have to depend upon the supplies from British India, Ceylon, South America, and Africa, and it would follow that acceptance of the proposed agreement by the Java people would lead to an immediate advance in the price of quinine. It is considered very doubtful whether Dr. Buchler will be able to come to a satisfactory arrangement with the planters, as there is no trace of co-operation among the latter. About three years ago, when a similar plan was proposed by leading merchants in Batavia about one-half of the planters agreed to limit their shipments for a year to three quarters of their estimated possible output. Very few of those who had agreed to do so, however, kept their promise, and the experiment ended in total failure.—*Chemist and Druggist.*

RETIREMENT OF A WELL KNOWN INDIAN BOTANIST.

Mr. M. Lawson, the Superintendent of the Government Gardens and Cinchona Plantation on the Nilgiris, is permitted to retire from the service on the 31st instant. As, however, there will be some difficulty in filling his place, it is unlikely, an Ooty paper says, that he will be relieved on that date. Mr. Lawson, who was formerly Professor of Botany at Oxford, and in charge of the exquisite garden which stretches along the bank of the Cherwell, which Macaulay described in a beautiful passage, came out to India in 1883 at the instance of Sir M. E. Grant Duff. Since then he has done wonders for the gardens at Ooty, and established and worked, unaided by any expert assistance, the Quinine Factory, which now does such good work for Government.—*M. Times.*

FIBRE MACHINES.

There are few subjects that have for some time back so much engaged the attention of mechanical engineers, and generally of those with an inventive turn of mind, as the construction of machinery for treating fibrous plants. A great incentive was, moreover, given to the prosecution of this search in a particular direction, by the magnificent reward offered by the Government of India for

an ideal machine to treat the fibre of the Rhea or Ramie plant (*Boehmeria nivea*) commonly known as China grass. It is needless to enumerate the advantages to be derived from the use of suitable machinery for extracting various fibres ; but hitherto none of the several machines that have been patented in England, the Continent and America, has given entire satisfaction when put to the test. Of late, attention has been specially attracted to a patent known as the "Todd Machine," of American origin, in connection with the fibre industry in the Bahamas and Florida, where it is reported to treat Sisal and allied leaf fibres with great success ; while still more lately the "Gomes's patent" (said to be a purely chemical method) for extracting fibre from Rhea and other members of the nettle family and from the cortex of other plants, promises to revolutionize the trade in such fibres.

A prospectus issued by a Manchester Engineering House, which has reached our hands, offers to supply all descriptions of machinery for dealing with fibre plants, such as the extractor, decorticator, crushing machine, willow softening, seeding, scutching and brushing machine ; rope-making machine, &c—capable of dealing with leaf fibres, stem-fibres and coir. We are specially interested in "Extractor No. A" said to be capable of extracting the fibre from all descriptions of leaves and stems, when worked up in a green state and freshly cut. The hand-power machine of this description, suitable for small planters and agriculturists, and guaranteed to produce 150 lb. of cleaned fibre per day, is offered at a moderate price. It would seem to be a machine of wonderful capacity, and if one of the kind could be set up in Colombo, and the quality of its work demonstrated to satisfaction, we have litte doubt of a local demand springing up in a country so rich in plants capable of yielding excellent fibres, particularly at the present time when fresh interest appears to have arisen in the fibre industry. The Manchester House concerned ought to establish a local agency and give the necessary demonstrations.

COFFEE CULTIVATION IN NETHERLANDS INDIA.

Papers laid before the Netherland States General give details of coffee cultivation in the islands beyond Java. In West Sumatra, and North Celebes, or Minahassa, coffee is grown as in Java by the inhabitants for Government at a fixed price on delivery—the price being far below the market value The result is that the yield is declining. Elsewhere in these islands coffee-growing is free. At Bencoolen, where the inhabitants would not plant coffee under the compulsory system, free cultivation has proved such a success that several thousands of piculs of the berry are now exported. The coffee is grown in the mountains. and its cultivation affords an abundant means of livelihood to the people. The cultivation of the Liberian berry is extending also there, and promises to benefit the inhabitants of the low country as well. From Palembang, the yearly quantity exported has now risen to over 14,000 piculs, and the people living in the mountains draw so much profit from the cultivation of the berry that many of them take to it by neglecting the cultivation of rice. In the independent district of Korinchi, in S. W. Sumatra, coffee-growing has widely extended and gains increasing favour among the people. In South Celebes, too, the natives are actively engaged in laying out fresh plantations under coffee, and the same is reported from Bali. There, the export of coffee from Buleling in 1893 reached 21,000 picul . In the Lampong Districts (Sumatra), coffee is taking the place of pepper, the cultivation of which is on the decline owing to the fall in quotations for that spice. In the Kwantan district (Rhio), the people steadily proceed with clearing forest land in order to plant coffee from seeds supplied by Government. —*Straits Paper.*

VARIOUS PLANTING NOTES.

MANURING OF TEA.—We hear that an Indian tea planter of long experience has been giving an opinion quite the opposite of that of the German Agricultural Professor from Japan. Large doses of artificial manure are no doubt undesirable ; but small proportions with bulky stuff ought to do good in every way. A trial of small doses of bonedust with the buried prunings might be desirable.

TEA PLANTERS UP NORTH have been having an anxious time of it with red spider and backward leaf, but a change appears to have set in with the rains. Red spider is always destructive in the early part of the season, disappearing with the heavy rain. Mr. G. F. Playfair suggests the sulphus treatment as the most effective way of getting rid of the pest. The method is to put refined flowers to sulphur into bags made of loose woven cloth, and to sprinkle the tea bushes by simply shaking the bags over them. This treatment, it appears, is useful also in mosquito blight, the dreaded *Helopeltis thievora.* The sulphur, it is said, adheres fairly well even on dry bushes, and is applied at the rate of from 1 to 2 cwt. to the acre and costs about R8-4 per acre, including freight in Cachar, where the experiments were made.—*M. Times.*

CEYLON TEA IN RUSSIA.—Read letter from Mr. M. Rogivue, Moscow, reporting on his work in Russia, and applying for monetary support towards advertisements, pamphlets, photographs, Snow-bills &c., for distribution, Erection and fitting of a Pavilion at the Nini Novgorod General Russian Exhibition &c. &c. Read letter from Mr, James Sinclair, also extracts from letters of Mr. William Mackenzie, in reference to Mr. Rogivue, and his work in Russia. Resolved:—"That the sum of £1,000/ Sterling, be granted to M. Rogivue for the sole purpose of advertising and pushing Ceylon Tea in Russia in the manner indicated in his letters, dated 29th Apr l and 6th May 1895 (2) that a credit to that amount be granted to the Ceylon Association in London, to be held at the disposal of M. Rogivue as he may require ; (3) that a copy of this Resolution be forwarded to Government for approval, to the Ceylon Association in London, and to M. Rogivue ; (4) that a letter on the lines of the draft approved by the Committee be forwarded to Mr. Rogivue, through the Russian Consul in Ceylon.

INDIAN TEA will not by any means have a walk over in America, Ceylon and China are already in the field and now Japan is preparing to enter the lists and run a tilt against its older and more firmly-established rivals. The American taste has yet to be educated to appreciate tea and just now it is very much in doubt as to what to adopt. Ceylons and Indians have rapidly risen in favour, but there are many who hanker after China tea and evince a special predeliction for the Oolong of Formosa. It is said to be in strong demand all through the country but more particularly in the eastern states. We are told that compared with Japanese tea, no particular superiority can be claimed for tea produced in Formosa, but it holds a better place in the American tea market, commanding a price higher by 10 to 20 dollars per 100 cattles. The total export of Oolong tea every year to America is about 17 million pounds, worth 5 to 6 million *yen.* It has been proved that any attempt to grow Oolong tea in Japan is idle, but now that the island of Formosa has become Japanese territory, it will pay that country to abandon its hitherto unsuccessful experiments to produce Oolong at home and turn its attention seriously to the improvement of the original industry in Formosa and the extension of its markets.—*Indian Planters' Gazette.*

THE NATIVE TEA GROWING INDUSTRY IN CEYLON.

It is quite clear that we must lay to account in discussing the future of tea in Ceylon, a very large and growing area planted in gardens owned by members of the native community. In the height of its prosperity, the Native Coffee Enterprise was a very important one in the island; for, in 1868 as much as 218,584 cwt. of "native" coffee were exported against 789,090 of "plantation" coffee, or about a fifth of our total exports had to be credited to the native gardens. It will be a long time, before we can say the same of tea; for apart from the period required to bring the exports from native gardens up to 18 or 20 million lb. of tea, there is the fact that simultaneously with an extended cultivation under native auspices, will come an extended local consumption, so that probably from one-half upwards of all the tea produced by Ceylonese-owned gardens will be sold in the towns, villages and wayside boutiques for the benefit of the Ceylonese themselves. There is every reason why this extended use of tea among the Sinhalese and Tamils should be specially encouraged. To keep the people away from the arrack-shops will be one notable advantage, derived from tea-drinking, and also to conserve the health of a people who, from their carelessness in respect of the water they drink, frequently get fever and dysentery, where a little care, or the drinking of tea instead, might save them from such attacks. Then to get a market at our doors for the common kinds of our teas, is of course so much of a relief to the markets served by exports. The Indian tea planters have long seen the advantage of getting the people of India to become tea drinkers, and the Government has taken special steps and much trouble in the endeavour to encourage a taste by the establishment of wayside tea boutiques and refreshment stalls. In Ceylon, this part of the work may be left to the enterprise and intelligence of the native boutique-keepers themselves; just as the garden owners in the Gampola, Nawalapitiya, Kotmalie, Pussellawa, Kadugannawa, Matale and many more valleys required no official nor foreign prompting to take to the cultivation of a plant which they saw was to be as profitable to them as ever coffee was. In some cases they have gone so far as to turn their paddy fields into tea gardens and splendid tea is grown on such alluvial flats. The progress upcountry may be judged from the information made available to us for the Gampola-Nawalapitiya valleys. In native tea gardens around Gampola extending from 1 to 125 acres each and aggregating 938 acres, the Manager of Mariawatte writes:—

"I buy leaf from these estates and gardens, but there are a great many more that sell to other factories. Messrs. Walker of Shamrock, Anderson of New Peradeniya, S. Agar of Kandy, C. E. Rowlands of Attahagie, F. H. Wiggin of Sogama, A. L. French of Ascot and G. C. Bliss of Atgalla could probably assist you with information as to other native holdings in tea. The acreages given are supplied by the owners, but how far they are correct I cannot say. Most of the gardens are only partly in bearing."

We are also indebted to Mr. T. R. Walker for a list of 44 native tea gardens extending from ½ acre to 110 acres giving a total of 533¼ acres; and of another list counting up 33 places from ¼ to 30 acres each or a total of 119¾ acres. Both these lists will be given in our Directory. Mr. Walker in his letter adds:—

"Many factories take leaf now and if you could get them all to give you a somewhat correct list you will be astonished at the acreage. Barnagalla, Mossville, Craighead, St. Clive, Carolina, Imboolpitiya, Goorookoya, Atgalla—all take in native leaf and from Polgahawella, Matale, Peradeniya, Pussellawa and Gampola you would get many acres. In the lowcountry—in Galle, Morawaka, Balangoda, Ratnapura, Kalutara, Kelani Valley there must be many native gardens and from what I see travelling about here, the native produce will be very great in a very few years."

The Manager of New Peradeniya estimates that he buys leaf from about 450 acres of native tea gardens. We shall, of course, be very glad to receive further lists of any gardens not likely to be in the above, if sent at once. But meantime, we may mention that our returns for the lowcountry of the Western and Southern provinces, indicate wonderful activity on the part of a number of Sinhalese in planting tea; and it is quite clear to us that in a very few years, we shall have to make a liberal allowance for the native crop of tea in Ceylon.

THE INDIAN TEA ASSOCIATION IN LONDON.

REPORT OF THE GENERAL COMMITTEE FOR THE YEAR 1894-5.

The following is from the fifteenth Annual Report of the Association:—

The General Committee of the Indian Tea Association (London) have the pleasure to submit to the members the following statement, on the conclusion of the fifteenth year of its operations.

RE-ORGANISATION.

At a general meeting held on July 9th last, at which Mr. S. E. J. Clarke, Secretary of the Calcutta Branch of the Association, and of the Chamber of Commerce of that city, was present; an interchange of views took place on this subject, and, as a result, a small Committee was appointed, under whose guidance arrangements were made with a view to keeping members more fully informed of the meetings, and of the work done by the Association, and its several Committees, and especially of maintaining closer touch with the Calcutta Committee. A set of suggested new rules was prepared by S. E. J. Clarke, while in England, and these have been placed in the hands of a special Committee for consideration and report, but up to the present no definite conclusion has been arrived at.

NEW MARKETS.

1. MR. BLECHYNDEN'S WORK AND ASPECT OF OPERATIONS IN AMERICA.—This subject has received continued attention from the American and Foreign Tea Committee, which met sixteen times during the year to consider Mr. Blechynden's operations and reports. These operations mainly consisted of "demonstrations" with native servants at four food shows at New York, Brooklyn, Chicago, and Washington, and in eighty-five "stores." But in the last few months these "demonstrations" have been strengthened by the addition of "sales-ladies," who, though affording a less striking and exceptional advertisement than the natives of India, speak no unknown tongue, and are thus able to explain effectively the merits of the tea. Mr. Blechynden has also included in his operations lectures, interviews with members of the Press, and notices in the newspapers.

There are no figures or ascertained results by which to gauge the measure of success resulting from these operations; but this, at least, may be safely accepted, that they have helped to stimulate curiosity and awaken interest about Indian teas in the States, and though the committee cannot prove that the operations have increased the consumption of Indian teas in America, there can be little doubt that they have served as good advertisements to start with. The mere fact that Mr. Blechynden has been able to send a list of one thousand grocers in the States, who profess to stock Indian teas, is good evidence of the increased attention given to those teas; and it

is not unreasonable to attribute the expanding consumption at least in part, to Mr. Blechynden's efforts.

On a careful consideration of the position the committee is of opinion that it is time to make a further advance. They think that there is not much more to be done through the medium of these small demonstrations at exhibitions, food shows, and stores. Something more is required, and the committee believe that it is to be found first in co-operation with Ceylon, and next in supporting the efforts of private firms and others, who are endeavouring to introduce Indian teas to the American public. The question of co-operation with Ceylon is dealt with below. The sale of British-made teas in America is now being pushed by many agencies and firms, among whom may be mentioned Mr. Lipton and Messrs Tetley and Co., who are both reported to be doing well, Messrs. P. R. Buchanan and Co., the Indian and Ceylon Tea Company, the Mazawattee Tea Company and others. Some two years ago, under the advice of Messrs. Gow, Wilson, and Stanton and Mr. Blechynden, this Association arranged to give some pecuniary facilities to Messrs. Reid, Murdoch & Co., of Chicago, for the purchase and sale of Indian tea, and since then 55,920 lb of the tea have been sent to that firm to keep up their special blend. The firm is also believed to be doing a good business in other Indian teas. The American and Foreign Committee, having considered all the facts before them, have no hesitation in recording their opinion that the opening of America to Indian teas can now be most effectually promoted by judiciously assisting, by advertisement and otherwise, the efforts of firms and persons now engaged in pushing the teas. This assistance of private firms can be effected either in co-operation with Ceylon or independently.

With further energy, perseverance, and the necessary funds, the future of Indian tea in North America is now assured, but the committee again wish to reiterate the necessity for such a subscription or levy from those interested in the future of the tea as will enable the committee to press forward with vigour for one more year at least the work of advertising and introducing the tea to the American public.

A note of the receipts and payments in connection with Mr. Blechynden's work in America from June 1894 to June 1895 is appended.

The names of the members of the American Tea Committee, who were empowered, at a meeting of the General Committee, to deal, not only with matters connected with America, but with those of all foreign markets, are: Messrs. A. Bryans, R. Lyell, A. G. Stanton, W. H. Verner, and C. W. Wallace, to which the name of Mr. J. N. Stuart was added, on his return to England.

2. PROPOSAL FOR JOINT ACTION WITH CEYLON IN AMERICA.—The committee have lately had under their consideration a proposal for joint action with Ceylon in America, and as the result of interviews with members of the Ceylon committee in London, aided by the report and advice of Mr. Wm. Mackenzie, the delegate of the Ceylon Planters' Association, who has just returned from visiting the United States, a scheme has been prepared for the consideration of the Associations, both here and in India and Ceylon. The scheme referred to was submitted to, and received the approval of, the special American Tea Committee and the General Committee of your Association; a copy has been sent to Calcutta; it has also received the unanimous approval of the Ceylon Committee in London, and it now awaits the sanction and approval of the Ceylon Association in Colombo.

The principal heads are: 1. Each of the Associations contributes £2,500 towards a joint fund to be used for advertising the teas of both countries conjointly. 2. In order to save expense these funds are to be administered by one commissioner, towards whose maintenance Ceylon will contribute £1,000 and India £500. 3. Ceylon will appoint the commissioner, but the appointment to be subject to the approval of India. 4. A small New York Committee to be appointed to advise the commissioner locally as to his action in disposing of the funds, and in advertising, the latter to be understood in its broadest sense such as: (a) Attending food shows, stores, &c. (b) Distribution of samples of the teas of both countries. (c) Advertising in the press. (d) (This is strongly recommended.) Subsidising such persons or firms as are pushing British grown teas in such ways as have commended themselves, provided they are willing to contribute a like sum, and to render accounts of the expenditure. (e) Such other methods as may be approved of by the New York Committee. 5. The commissioner to use no bias in favour of India or Ceylon; all advertisements to be equally fair to both countries. Lastly—a joint committee here of six members (three members representing India, and three Ceylon) to appoint the New York Committee, administer the funds, and consult as to the action taken, and to advise their respective associations of the progress of events. The arrangements to be in force for one year.

Note.—Since this report was in type the committee has learned with regret that the scheme is disapproved of in Ceylon, and consequently falls to the ground.

3. UNITED PLANTERS' ASSOCIATION OF SOUTHERN INDIA.—Communications have passed between your committee and this Association as to the important subject of new markets, and it is satisfactory to learn that the planters of Southern India have identified themselves with their brethren in Bengal in the endeavour to find fresh outlets for Indian tea, and have generously subscribed to the fund raised for that purpose in Calcutta.

4. INDIAN TEA IN SOUTH AFRICA.—Copies of a communication received from a resident of Capetown suggesting the opening of business relations with that colony by the Association were received from Calcutta, and copies circulated for general information. The suggestion that the Association should interfere in trade matters received but little support.

5. INDIAN TEA IN SPAIN.—A proposition was held before your committee to make a grant for three years of £180 per annum towards the establishment of a tea room in one of the best parts of Madrid, where the want of some advertisement of Indian tea appears to be felt. But in view of the small consumption of tea in Spain and the paucity of funds it was thought unwise to divert money in that direction, although the field was a somewhat promising one, the price demanded for good tea being prohibitory.

THE CHINA-JAPAN WAR.

Little or no excitement has been caused on this side by the existence of hostilities between China and Japan, which might have been expected to interfere with the course of trade between China and those countries in the habit of receiving her teas. The fact, however, of hostilities lasting so long will, no doubt, have drawn the attention of consuming countries to the existence of other sources of supply, and have thereby led in a great many instances to the production and trial of British-grown teas, with results which cannot fail to be advantageous to producers in India and Ceylon.

MR. A. G. STANTON'S PAPER ON TEA.

A valuable contribution to the literature on the object of the supply and distribution of tea is made by Mr. A. G. Stanton, a member of the General Committee, in a paper read by him, before the Society of Arts, on January 23rd, followed by a discussion on the relative merits of Indian, Ceylon, and China teas. Copies of this number have been sent to America, India, and elsewhere, and quotations from the article are continually being made in trade journals abroad, particularly in Chicago. The diagrams, maps, and tables have been reproduced en bloc, and can hardly fail to impress the American public with a just idea of the importance of the industry.

[A reproduction of Mr. Stanton's paper is given in the appendix to this report.]

"TIMES" ARTICLE.

Under the head of "Indian Affairs" a valuable article appeared in the *Times* of 6th August, calling attention to the urgent need of new markets. This article was reprinted, with some correspondence re-

lating to it, and widely circulated both in England and in India. Copies were also sent to America and elsewhere, and it is hoped that the effect will be to convince planters of the necessity for combined and vigorous action in the direction of finding new outlets for Indian tea.

[A copy of this article and the correspondence is given in the appendix.]

THE LABOUR QUESTION.

The all-important question of labour supply has been under the consideration of your committee, and papers in connection therewith, received from Messrs. Begg, Dunlop, and Co., Calcutta, secretaries to the Tea Districts Labour Supply Association (with which is amalgamated the General Coolie Recruiting Association), were circulated to members.

A meeting of the General Committee was held on February 21st which was well attended, and a resolution was arrived at that it was advisable to support the action of the Managing Committee in Calcutta as to recruiting coolies through the established agency of the Association, with a view to removing the evils attending the system of obtaining coolies from Arkattis and contractors outside the association. A subsequent meeting was held on May 6th which was also largely attended, and at which Mr. D. Cruickshank was present, and explained fully the latest aspect of the question. A Committee was elected, consisting of Messrs. R. J. Boyle, D. Cruickshank, R. B. Magor, J. N. Stuart, and J. Stewart, to further consider the question. This Committee is now engaged on that work.

INDIA MUTUAL LINE AND THE "CONFERENCE" NEW AGREEMENT.

This line cannot be said to have worked quite satisfactorily to shippers, owing to the inability of the owners, from various causes, some of which were quite beyond their control, to maintain a thoroughly effective service, in terms of their contract. To the owners the result was not a financial success, and an appeal was made by them for more favourable terms, in consideration for improved service and an extension of the term of contract. At the same time they admitted their liability to continue on existing terms, and left the shippers at liberty to cancel the contract and make other arrangements, if they considered it in their interest to do so. On this, negotiations were opened with the "Calcutta Steam Conference," and several important meetings of tea shippers were held to consider the question, with the result that Mr. Magor was authorised to represent the shippers in these negotiations; and, mainly through this gentleman's efforts an advantageous agreement was entered into with the "Conference the chief points of which are: 1. Five years' agreement, terminable by two years' notice on either side, but not before March 31st, 1,900. 2. Freight to be 10s net above the average rate for rough cargo. The advantages of the "conference" service will be manifest to all, and the vexatious question of rebate, against which your committee has strenuously protested for many years, has at last been eliminated.

SMALL BREAKS.

Representations having been received from India that some of the Darjeeling planters found it difficult to comply with the new rule fixing the limit of a full break at twenty chests, thirty half-chests, and fifty boxes, the Tea Brokers' Association of London was communicated with on the subject, and the operation of the rule was carefully watched, while the Calcutta Association was requested to nominate a delegate to represent the views of the Darjeeling planters. Mr. C. Milner, of Messrs. Lloyd and Co., having been named, that gentleman was invited to attend the Committee. Further experience seems to show that the new rule is working beneficially to tea proprietors all round, including those of the Darjeeling district.

REGULATION OF SUPPLIES.

Information, with a view of creating a more healthy public opinion on this subject, was sent to all members and at no time during the year was there such pressure on the market as to cause any serious collapse of prices.

BHUTAN-DOOARS ACT.

The proposed substitution of Act X. of 1859 for the Bhutan-Dooars Act received the attention of those members of the General Committee who, from their official life in India, were practically acquainted with the question, and representations on the subject were made to the Government of India through the Association in Calcutta.

THE DUTY ON TEA.

This remains as before at 4d per pound (to which point it was reduced in May, 1890), although the usual anticipation of a further reduction was indulged in before the Budget was produced this year. In connection with this question an interesting letter written by Sir Henry H. Howarth to the *Times* will be found in the appendix.

INDIA AND CEYLON IN THE IMPERIAL INSTITUTE.

The ill effects of blind rivalry between Ceylon and India were illustrated at the Imperial Institute, where a monopoly, obtained by Ceylon for the sale of its teas at a cost of £300, resulted in a heavy loss to those who found the money, and the discontinuance of the arrangement at the close of the year.

TREATMENT OF TEA COOLIES IN ASSAM.

A series of articles in a weekly publication, headed "More Slavery Under the British Flag," "The Free and Happy Coolie," &c., attacking the system of recruiting, and indirectly reflecting upon the planting community in Assam, having appeared, and being greatly based upon misapprehensions, Surgeon-General A. C. C. De Renzy, C.B., kindly undertook to reply to them, and an able letter from him (published in the *Home and Colonial Mail*) will be found in the appendix. The attention of the various London Tea Companies was called by the secretary to the importance of giving in their annual reports vital statistics as to their labour force, and other information evidencing the care which is usually taken for the coolies' well-being and comfort. This has been generally done.

ANTWERP INTERNATIONAL EXHIBITION.

The Indian Planters' Co-operative Tea Supply Association, Limited, supplied Indian tea both in cup and in packet at the exhibition. Samples of fine Indian tea, including those lent by Messrs. J. B. Barry and Son, were shown, and information as to the progress of the industry was supplied by statistical tables furnished by Messrs. Gow, Wilson, and Stanton, also by handbills. A large number of circulars in Flemish and French were distributed. The secretary visited the exhibition with a member of the General Committee, and a report of his visit will be found in the appendix. A silver medal was awarded to the exhibit.

EMPIRE OF INDIA EXHIBITION.

Arrangements have been made for a tea house in the Indian City at this exhibition, which was opened on the Queen's birthday. Mr. E. F. Langdale, who is well known to the members, having previously had charge of the Indian Tea Stall at the International Health Exhibition, held at South Kensington in 1884, has undertaken the responsibility of the teahouse. In connection therewith will be an exhibit of Indian teas, and of other matters of interest in connection with tea planting in India, for which samples, &c., are being sent from Calcutta in response to a circular issued by the Association there. Messrs. Gow, Wilson, and Stanton have kindly supplied a large coloured diagram illustrating the progress made by British-grown teas, and the falling off in the use of China and Japan teas.

LONDON TEA SWEEPINGS.

Various methods had in times past been tried in order to get rid of the tea sweepings, including refuse and damaged tea. Consigned to the dust bin, they had been picked out, manufactured, and sold to the poor. Burnt, they had proved a nuisance to the neighbourhood. Consigned to the sea they had involved a considerable expense. Their destruction having been accordingly relinquished, they were after treatment exported to the Continent, and in some cases found their way back to this country, and were sold as good tea on this market. After considerable corres-

pondence, and with the assistance of Mr. T. Christy, the well-known chemist, who interested himself in the matter, a Port Order was issued by Her Majesty's Customs (copy of which will be found in the Appendix), which effectively stopped any further exportation of sweepings to the Continent. These teas are now "de-natured and converted into "caffeine."

A NEW INDUSTRY.

"Caffeine," or "Theine," is a new industry by which low class tea dust, as well as prunings and injured tea, hitherto considered not worth shipping, can be converted into money, much of the material being shipped from Calcutta in bags or boxes at a low rate of freight as "tea refuse."

"ADHATODA VETICA."

This is a new insecticide which has been discovered in India, in connection with which your committee have been in correspondence with Mr. R. J. Doyle, the Curator of the Indian Section of the Imperial Institute, to whom two complete sets of the papers received from Calcutta referring to this plant have been sent. A set of these papers can be seen at the office of the Association by members at any time.

[An appendix given with the report contains the following reprints, which have already appeared in our columns: "A paper on Tea by A. G. Stanton (of Gow, Wilson, and Stanton, 13, Rood Lane, E.C.), read before the Society of Arts, January 23, 1895;" "Foreign Markets for Indian Tea, article on Indian affairs, the *Times*, August 6, 1894;" "Ocean Freights," "Sir H. H. Howorth and the Tea Duty," "Treatment of Coolies in Assam," "The Antwerp International Exhibition," "London Tea Sweepings."]—*H and C Mail*, July 12.

ROADS, RAILWAYS AND PLANTING IN PERAK.

As usual, Mr. F. A. Swettenham, C.M.G., renders a full and able Administration Report on the State of Perak for 1894. Of much importance is it to note Mr. Swettenham's sympathetic deliverance in reference to the Planting Enterprise as follows :—

If the falling price of silver is helping the miners of the Malay Peninsula to crush all rivalry in Cornwall or Australia, the same cause will give a manifest advantage to the planter who sells his coffee, tobacco or spices in a market where payment is made in gold. The conditions of soil, of climate and rainfall that he requires are here, the transport facilities are good and improving yearly, labour is cheap and may be made plentiful, and all that remains is that the Government should be liberal in the terms on which it alienates the land. It is the opportunity of the planter, and it is also the opportunity of the Government; it would be a serious blunder if the fact were not grasped that the interests of both are identical.

Failures cannot benefit the Government, and at this moment, when European planting in the Malay Peninsula is still in its infancy, the man who brings us his capital, invests it in agriculture and loses it, can only serve as a scarecrow to frighten away intending planters.

Mining is and must ever be surrounded by risks; it is an unfortunate fact that many Europeans have invested considerable sums in mining ventures in the Malay States and have lost them, and yet it is not and has not been urged that the Government has placed difficulties in the way of acquiring mining land. When the British Government undertook to advise the Malay Chiefs in the Government of their countries there were no alluvial tin-mines in any British territory nearer than Australia, and no objection has therefore been raised to the regulations framed in the Malay States for the conduct of an industry that has now no rival in the world in the magnitude of its operations. We give to the miner what is often fine land covered with magnificent forest, and when he has destroyed the timber he turns the soil upside down and after a few years abandons it, leaving huge stretches of country a sightless waste of water-holes.

Whilst the operations last the Government secures a large revenue, and, as I have already explained, that revenue has been very usefully employed.

The case of the planter is the exact reverse. He converts the jungle into produce-yielding fields, he *settles* on the soil, it is to his interest to foster to the utmost a property which will only give him a fair return after the investment of capital and years of toil. His object is to keep the land in cultivation, and when one product fails (as coffee failed in Ceylon) he immediately turns his energies to the introduction of another.

Here also there is a permanent revenue to be gained from the export duty on produce, and it wants no great effort of imagination to see a day when the duty on agricultural exports may exceed that on minerals. The returns in the latter case are much more rapid; but to make it easy to mine successfully and difficult to plant with profit may be good shopkeeping, but seems indifferent administration.

I feel very strongly that the Government cannot pursue a wiser policy than the encouragement of the planter. I have been told that the terms in which land has been granted to planters in the Malay States under the regulations which I drafted are too liberal, that they are thriftless, and I have failed to safeguard the future interests of the Government and retain the power to share in the rising value of alienated lands. The revenue returns of the last five years given in paragraph 63 *ante* are some indication of the result of the policy hitherto pursued in Perak, a policy which was endorsed by the great experience and sound judgment of Sir Hugh Low. Up to the present time planting in Perak has been confined, with very few exceptions, to small native cultivators, but while the Government retains the power to determine the amount of the export duties and while there remain millions of acres of land available for planting, and the total area granted is only 157,209 acres, I do not think the interests of the State can be said to have been greatly neglected in the past or seriously endangered for the future.

SEVEN CEYLON TEA PLANTATION COMPANIES DECLARING HANDSOME *AD INTERIM* DIVIDENDS.

At the office of the Agents and Secretaries—Messrs. Whittall & Co.,—the Directors of the following Tea Companies met on 3rd August and declared the very liberal ad-interim dividends mentioned opposite each name :—

YATIYANTOTA TEA COY. LD.	..	10 per ct.
WE OYA TEA COY. LD.	..	10 per ct.
DUNKELD ESTATE COY. LD.	..	9 per ct.
UPPER MASKELIYA ESTATES COY. LD	..	8 per ct.
GLASGOW ESTATE COY. LD.	..	8 per ct.
AGRA-OUVAH ESTATES COY. LD.	..	8 per ct
MAHA UVA ESTATE COY. LD.	..	8 per ct

It should be noted that the above are the actua percentages to be paid—the rate per cent *per annum* being of course double the above figures.

INDIA POSSESSES IN ITS TAMIL POPULATION a wealth of resource that it has not properly realised, says the *Madras Times*. Wherever Tamils go they are acknowledged to be wonderfully adept agriculturists or planting coolies; they are cheap, even as imported labour; and they are generally more law-abiding than the natives of the places they sojourn in. This being the case, why are they not made more use of at home? Why is the Indian planter crying out for labour, and why are numerous industries in which the Tamil cooly could shine neglected or untried altogether.

PLANTING IN THE STRAITS.

(*From Mr. Martin Lister's Administration Report on the States of Sungei Ujong and Jelebu, for the year 1894.*)

COFFEE.—Three leases were issued to coffee planters in the Seremban District, the area leased being about 2,500 acres. In the Coast District there were seven applications by natives for small areas amounting to 69 acres. The Collector of Land Revenue, Seremban, reports that the proprietors of the various coffee estates have largely extended their operations; that a new field has been opened on the Linsum Estate and that the Ribu Estate has been greatly improved. The Syndicate owning the Sinawang Estate has opened up about 300 acres of coffee, and Mr. Dunman has shewn great energy in the opening up of a considerable area at Terentang, adjoining Sinawang. A fair area of land also has been opened on the Gunong Angsi Estate.

PEPPER.—There is a considerable cultivation of this creeper in the Coast District, and, as pepper requires mulching, gambier is grown in connection with it, and the refuse after cooking the gambier and extracting the juice is used to cover the land on which the pepper is planted.

(*From Mr. Cecil Wray's Monthly Report on Lower Perak, April 1895.*)

The few cacoa trees at the penghulu's house have grown a great deal and look very healthy and are full of fruit, but the nutmegs do not look very flourishing. Some vanilla brought from Mauritius looks well and flowers freely, but does not set any fruit, which is only to be expected, as the owner does not understand the cultivation of the plant. A great deal of new land has been applied, for along the old road running through the Mukim from Kampong Padang to Kota Lumut, and the people are anxious to have the road cleared and put in order.

The penghulu has three splendid orange trees grown from seed given to him by the late Mr. F. W. Brewster some years ago. They are certainly the finest I have seen in the Straits. One of them, the largest, bore over 1,000 ripe oranges last year, and is now breaking down with the crop on it.

(*From Annual Report on Krian District.*)

SUGAR.—About 31,000 acres have been alienated for sugar planting in Krian, of which 13,000 acres are under cultivation, and employ permanently 7,500 Chinese and 2,000 Tamil labourers, besides Javanese and Malays. The price of brown sugar, which is the chief product of these estates, averaged between $4·35 and $4·85 from January to September, and fell in October to $4·10, in November to $3·40 and in December to $3·10, since which it has gone as low as $2·60 a pikul, a price that will barely cover the cost of production. The price of white sugar also fell steadily, till at the end of the year it had reached a figure the sterling value of which is lower than has been known before. The Gula Estate, which is the largest in Krian, is the only one under European management. I am indebted to the manager for furnishing me with a review of the year's progress. At the close of the year considerably over 2,000 acres were under cultivation; the area actually yielding a crop being over 1,600 acres. Owing to the difficulty of obtaining a supply of Tamil labour, part of the estate has been sub-leased to Chinese on what is known as the *rumah kechil* system.

The whole labour force at the end of the year was:—

Tamils, indentured	...	..	930
Do. free	..	..	570
Chinese Sinkehs	..	..	54
Do. Lankehs	..	..	150
Malays and Javanese	..	..	175
		Total ..	1,879

excluding women and children who are not labourers but who reside on the estate and number between four and five hundred. A new hospital was built on the estate; a steam still for manufacturing rum was erected, and sugar store, office and laboratory added to the plant, at a total cost of $45,000.

A concession of 5,000 acres adjoining the Gula Estate has been taken over by the same Company from the concessionaries, Messrs. Kennedy & Stewart The concession is now being demarcated: no work except a little jungle felling having been done up to date.

Mr. Koch, a private surveyor, surveyed 7,455 acres of sugar land during the first four months of the year, in addition to the work done by Government.

INDIAN PATENTS.

Calcutta, July 18th.

Applications in respect of the undermentioned inventions have been filed, during the week ending 13th July 1895, under the provisions of Act of V. of 1888:—

For a cleaning Apparatus for the "Acme" Tea Sorting Machine or other machines of the Reciprocating Class—223 of 1895.—George Murray Collom, Engineer and Tea Planter, care of W. G. Forbes, Esq., H. M. Mint, Calcutta, for a clearing apparatus for the "Acme" Tea Sorting Machine or other machines of the reciprocating class.—*Indian Engineer.*

TAPIOCA IN MALACCA.

A Syndicate has just purchased a tapioca estate of 5,000 acres belonging to Cho Bun Pu, and situated in the Negri Sembilan about 38 miles from Malacca. It is said that one third of the purchase money of $28,000 will be furnished by the Hylam domestic servants of Singapore.—*S. F. Press.*

MAURITIUS.

Port-Louis, July 5.

THE WEATHER AND THE CROP.—The plantations have been well watered during the past month and the rain continued falling till the beginning of the month of July. The ripening of the canes has been retarded by the heavy rains with a rather high temperature. It will not be possible to begin cutting the canes before the 15 of next month or the end of August.

VANILLA.—The market is quiet. We have no sales to record. As we mentioned in our last, the outturn of the coming crop will not exceed 3,500 kilos.

We quote nominally:—

1st quality	-	R33 to 34	per kilo
2nd do	-	26 to 28	,,
Good to middling	-	20 to 21	,,
Vaniloes	-	14 to 15	,,

ALOE FIBRES.—The market is quiet. We have no sales to record. We quote nominally:—

1st quality	-	R240	per ton.
2nd do	-	200	,,

—*Merchants and Planters' Gazette.*

MYSORE PLANTING NOTES.

SOUTH MYSORE, July 26.—We have had seasonable monsoon weather for the past six weeks, but little rain has fallen for the last few days, although it can hardly be said that we have had a single break since the monsoon burst on the 4th of June, as rain has fallen every day and the sky has always been overcast.

The very long drought experienced has acted detrimentally on the coming crop. There was a big promise on most estates and an extraordinary show of bud on many places. On some trees I counted 54 spike in a bunch and the average would have been about 40. It is well-known that big bunches generally constitute a good crop. The extreme and prolonged hot weather dried up a lot of the bud. A lot of fine wood has totally failed to set its blossom. Luckily on account of the fine condition of the coffee after a small crop last season and the abnormal show of bud, even after the failure very good crops will, as a rule, be picked.

The scarcity of good Government jungle in favourable localities and the price of coffee keeping up and steady, has naturally caused a corresponding rise in the price of land; but I think the price of very ordinary jungle of about 12 acres near Mudigeri, which was sold by one Gowda to another for R7,000 "takes the cake." R214 per acre was paid some time ago by a European planter in public auction for a piece of scrub adjoining his estate, and by another, an extensive piece of deciduous jungle was only secured by him at the rate of nearly R200 per acre, the villagers having run the price up. These are exceptionally fancy prices, but they are instances of the upward tendency which has lately taken place in the price of jungle.—The borer has been rather more active this season than last. The rubbing of the stems of the coffee trees in the pruning, and just before the fly lays its eggs, seems only partially to check the pest, as the trees which are bored generally break off at the foot of the steam and often under the soil. The inference to be drawn is that the fly finds its way to the stem below the soil and deposits its eggs there. It will be necessary to rub as low down as possible in the next operation. The silver oak (Grevillea) has gained in favour, and a good many planters have been led to look favourably on it as a desirable shade for coffee. It is a light shade and its deposit is doubtless valuable; it grows quickly, which is another great point in its favour. As regards labour, most managers are not so well-off in this respect as they were a year ago.—*M. Mail.*

PICKINGS WITH A LOCAL APPLICATION.

An Australian exchange thus refers to the enterprising seed merchants and nurserymen of Heneratgoda:—

The available information in Queensland concerning tropical products is not great. This in the past has been largely due to the fact that the agriculturist on our Northern coast lands has up to the present confined himself to cane, coffee, and rice, and the commoner varieties of tropical fruits. Attention is, however, being devoted to other products, and at this juncture a useful budget of literature reaches us from Ceylon. Messrs. J. P. William and Bros., seed merchants and nurserymen, forward us their descriptive price lists of tropical seeds and plants, bulbs, tubers and yams, and a number of leaflets dealing with new products and with special varities of old ones. All the seeds are those of tropical and sub-tropical cultivation, and the publishers show praiseworthy energy in pushing to the front new varieties and new species which are finding a ready sale in the markets of the world. We have a large area capable of growing pepper, spices, and oils, besides fruits, etc., and if we cultivate from the best of seeds and stocks, success should be assured. As an instance we may quote the giant pineapple, weighing from 10 to 28 lb., a fruit unknown to us here, where the heaviest pine never exceeds the lower figure.

KAPOK has lately been mentioned in connection with the revival of the fibre industry and the following correspondence in the Cape Colony *Agricultural Gazette* with reference to this article is interesting:—

The Melbourne *Age*, January 28th, urges the Victorian Minister for Agriculture to experiment with the South Sea Island (*sic*) plant kapok: which in the Goulbourn Valley, near Melbourne, rapidly reached a height of 12 ft. and bore numerous pods full of seeds and fibre; the latter being largely imported into Sydney and Melbourne for stuffing mattresses, cushions, etc.

The matter has been mooted in Parliament by Mr. Pendergast, M.L.A. showing that the Australian soil and climate suited the shrub, and that if grown freely, the fibre might soon form a new export to Europe. It is already grown in the Horticultural Gardens, Burnley, Victoria, and also at Shepparton by Mr. Matthews, so that it clearly deserves some help from the executive, and if its merits are attractive enough to extract a small clieque from the Cape Government, a rood of it may in good time be seen flourishing on the Cape Flats, where seed could be sent broadcast through the Colony and South Africa.

Cape Town, February, 27th 1895. P. F.

If our esteemed correspondent will look up the back issues of this *Journal*, he will see that utilization of kapok down is a very old scheme here, even if it be a novelty in Victoria. Compare Vol. i. p. 120, where a report is given on what a correspondent sent as "East India Thistle Down." Then follows on page 162 a letter in which the plant providing it is reported from Calvinia; page 251 refers to proposals to mix it with silk and page 313 giving name and address of a manufacturer willing to pay cash for any quantity of it. Also consult *New South Wales Agricultural Gazette* V. p. 7, where a figure of the plant is given. Cape kapok is in the same predicament as Cape fibres, and so many other things that are Cape. They are bulky and will not bear our extravagant freights. They grow without labour or culture, yet the cost of collecting amounts to more than the stuff will fetch at the store of the exporter. It is true that the down of *Bombax Ceiba*, and to some extent of *Calotropis procera* are imported into Holland for upholstery stuffing, but who is it does the collecting? Not any person comparable to our well-fed darkie population, but famine stricken Indian ryots and their families, whose wage is calculated on a nice perception of the exact amount of pice and annas which will serve to keep their bodies and souls together. The lines have fallen to our labourer in far too pleasant places for him to go bothering about after Gomphocarpus down, and get perhaps sixpence for his day's collection.

The plant producing the down grows all over the colony, and could be cultivated as easily as hemp or ramie. But when manufacturers propose to go in for utilizing a new product they have an awkward knack of saying "Are you prepared to guarantee us under penalty not less than *x* tons per annum, so that we may be recouped for our outlay and initial charges, and not find ourselves stopped short for want of material?" And nobody here will answer "Yes." Believe me, it is this obvious necessity of the manufacturer's position that has strangled in the birth dozens of fair-seeing proposals for the utilization of things which have a small value, a large bulk, and which unfortunately will not gather themselves, and jump into the exporter's bales without hands. My old friend, Samuel Cawood, spent a small fortune in trying to get the natives to grow and pick Sea Island cotton down along the Albany and Kaffrarian coast. He gave them the seed for nothing and offered fourpence a pound for the product. They put the seed in, some of them, and—let the cotton blow away. So speculative Samuel never got beyond the second or third bale. And mind you this was not cheap kapok for filling pillows, but costly long stapled cotton, beloved of Lancashire spinners. We are a peculiar people at the Cape, and if a staple won't pay for collecting and exportation, we let it severely alone.

P.M.O.

Dr. Weir, District Surgeon of Engcobo, Tembuland in a communication to the Department, states that he has found a combination of Ipecacuanha and Ammonia a very effective antidote in snake-bite. The method of treatment which he adopts is as follows:—"Scarify the wound and sprinkle a small quantity of powdered ammonia upon it, then apply a poultice of linseed meal with ½ ounce of ipecacuanha powder. Give an emetic of ipecacuanha powder and follow it up immediately with ipecacuanha wine in medicinal doses combined with rather large doses of aromatic spirits of ammonia until recovery is complete." Finding this combination so effective in snake-bite he tried it in the treatment of the contagious lung-sickness of cattle, and with encouraging results. Mr. Smith the gaoler at Engcobo, who attended to the cattle, cured six out of seven cases affected. The prescription for a full-grown beast was:—

Ipecacuanha powder ½ ounce, Carbonate of ammonia ½ ounce. Mix in a pint of water and administer If necessary half the above quantity may be repeated in 36 hours.

The same prescription has been successful in the treatment of influenza in horses.

The following is a description of how maizena is made from Indian corn, by one who has been making it for 8 years. The account appears in the Cape Journal :—

I take a big basing so that a few persons can sit around it. I then throw the mealie cobs into the water which softens the grain.

I then rasp tho grains in the cobs, so as to make a rough meal, till all are rasped off. I then wash the cob and put all the meal, which is obtained by the above process, into clean water, and then put all the fine meal through a strainer into another basin. On the husks left in this first basin I pour a jug of water so that all the meal may be washed out; after that strain it through a piece of linen into a porcelain bowl. After the meal has settled, the dirty scum floating on the top must be removed, then clean water must again be thrown on and the white sediment stirred up. It must be treated in this manner until bubbles cease to come up, then it is taken out and placed in fine linen bags, which must not be too full. The bags should then be placed on a framework made of netted wire, so that air can reach them on all sides. Two or three times a day it should be turned over and the lumps broken up. When it is dry it is sieved and put into bottles. The bags protect the maizena from dust which is otherwise difficult to keep out. I usually make the rasp I use out of sardine tins.

AN OLD PLANTING DISTRICT WELL TO THE FRONT:

GO-AHEAD RANGALLA.

(From a Visitor.)

2nd Aug.—Just come back from a visit to Rangalla. The old district is coming to the front with fine central factories such as "Duckwari" with its telephonic communications 'twixt Manager's bungalow and his Factory and Assistants' bungalows; and new district cart road in the Nitre Cave direction and which the P.W.D. take their time to complete. The pleasant thoughts of such resuscitation of the go-aheadness of the old district are much mixed with sorrow at the loss of such men as the Martins and Nicol. It has still connected with it the Youngs, Pattenson and Burke—good men and true. Natives seem to be enjoying the prosperity of the tea enterprize. Good, large native gardens and well cultivated, attract the eye.

CUBAN SUGAR PLANTERS.

Consul Baker, at Sagua la Grande, Cuba, under date of June 12, reports to the State Department upon the sugar crop, saying :—"The sugar crop of 1894-95, having been marketed, leaves no doubt of a material decrease from the yield of the previous year. This, together with the very low price realized by the planters, leaves the sugar growers of Cuba in a helpless condition. They now frankly admit that they will not be able to secure loans with which to make the coming crop, which means that not exceeding one-half of the usual acreage in new cane has been planted, and a corresponding neglect in the gleaning of the present crop. In truth, the condition of the planters of this island is distressing; and the end is not yet, for when it is recalled that fully one-third of the inhabitants depend on the plantations for employment and a living, and that the owners thereof cannot obtain money to engage their labours, actual suffering must ensue."—*Bradstreet's.*

THE TICK PEST IN THE TROPICS.

Those living in temperate climates have probably small idea of the virulence of insect and other pests in the tropics. A plague of caterpillars may destroy a season's crop in England, but there is the winter's frost to be passed through before a second attack need be feared. It is otherwise in the tropics. Vegetation is much more luxuriant, and the food supply is permanent; and, when once a plaguo has obtained a firm foothold, there is no apparent reason why it should cease i's ravages before it has entirely destroyed its particular host. It is fortunate for agriculturists that the great increase of any particu'ar parasite seems ultimately to work out its own destruction; and frequently when all hope seems over, the plague rapidly and unaccountably disappears.

Surprise has been expressed that ticks infesting cattle have received so little real study. Quite recently the statement appeared that these parasites formed the least known part of the tropical fauna. But a great deal has been done in this direction of recent years, and there seems some hope of real progress being made.

Taking the conditions into consideration, it is a matter of great wonder that so few ticks exist in many parts of the tropics. No real attempt has been made to decrease their numbers, and there appears to be no season of the year when the climate is fatal to them. Vegetation is rank, and we know now that they can live to a great extent upon vegetable matter; further, even where there is a scarcity of small indigenous mammals, there are plenty of horses and cattle. The multiplying powers of ticks are enormous. In one case I determined the number of eggs from one female as over 20,000 (see Fig. 3), and almost all of these were fertile and produced young ticks. The increase in numbers of ticks in most countries is not marked, however, and we are driven to the conclusion that there is here, in the animal kingdom, a waste of material analogous to that in the seeding of parasites and saprophytes among plants.

It is not surprising now and then to hear of a long-continued plague of ticks from one place or another where cattle-rearing is a staple industry. In Jamaica, it is by no means uncommon for the traveller to get covered with "grass-lice." On pushing aside tho branches overhanging the riding path, I have been immediately covered with firmly attached young ticks which needed much care and patience to remove. The ticks of Jamaica are now a very serious source of anxiety in cattle-pens, and much loss is attributed to these parasites.

During my stay in Antigua, complaints were loud and frequent of the ravages of a large tick, which infested the cattle between the months of May and September. In the cattle and sheep farms of the Cape of Good Hope and Australia the "tick" matter is absorbing much attention. Specially large and annoying forms are described from parts of India, Central Africa and Central America; while extraordinary tales are told of the destruction caused by these parasites in cattle-rearing districts of South America. Elaborate and expensive researches have been conducted in the United States Southern Experimental Stations upon the life-history of the ticks and their relations to cattle; and the exhaustive reports, issued from the Bureau of Animal Industry, form by far the most valuable part of our economic literature on these pests.

The books of travellers teem with references to the annoyance caused by ticks. Sir Joseph Hooker, in his "Himalayan Journals," describes their abundance in the frontier regions between Sikkim and Nepaul, in pathless tracts destitute of animal life. He writes the following concerning the neighbourhood of Tonglo: "A large tick infests the small bamboo, and a more hateful insect I never encountered. The traveller cannot avoid these insects coming on his person (sometimes in great numbers) as he brushes through the forest; they get inside his dress, and insert the proboscis deeply without pain. Buried head and shoulders, and retained by a barbed lancet, the tick is only to be extracted by force which is very

painful. I have devised many tortures, mechanical and chemical, to induce these disgusting intruders to withdraw their proboscis, but in vain."

Bates, on passing through the grassy lanes of the second-growth woods on the Amazons, often found himself covered by ticks. It occupied him, he says, a full hour after his day's work to clear himself of the parasites.

Belt refers to the "grass-lice" on the plains of Nicaragua, as quickly covering any one travelling through the country, so much so, that the herdsmen or "vacqueros" keep a ball of soft wax with which to rub themselves. The smaller ticks are thus removed from their skin, while the larger ones are picked off by hand.

Many a time, in walking through grass in the Leeward Islands, I have been conscious of the peculiar itching at the ankles caused by the attacks of "bête rouge." The bête rouge is not in reality a tick, although often confused with it. Horses seem to be particularly liable to its attacks, with the result that they lose all the hair about the face and eyes. In all probability the poor animals suffer a good deal, for the personal irritation is extreme. The bête rouge is exceedingly minute, and, as its name implies, is of a brilliant scarlet. At night, after retiring to rest, the warmth of the body seems to increase the irritation to the utmost pitch, and sleep becomes absolutely impossible. Rubbing or scratching the parts attacked merely intensifies the discomfort, the creature pushing itself deeper into the flesh. Most painful sores are the result if the greatest care is not taken. The one certain remedy seems to be to anoint the inflamed spots with vasline. This substance not only soothes, but appears to destroy the bête rouge by stopping up its breathing pores. I have never succeeded in detecting the creature on the skin, but, when reading in or near an infested lawn, I have captured many by watching for the minute scarlet dots travelling over the white paper.

The damage done by ticks to cattle is undoubtedly very serious. According to observations by Leidy, the adult female tick is able to absorb 100 times its weight of blood, swelling during that time to an enormous extent. This food is rapidly changed into eggs. The adult male does not increase appreciably in size, but his demands upon the host have probably been greatly under-rated. An account of tick-infested cattle in Queensland states that they were so completely covered that the branding-iron had to be burnt through the ticks before it was possible to reach the animals' skins. A case in Texas is mentioned where it was found impossible to lay a silver dollar upon the body of the animals without touching some ticks. Again in Texas, 100 full-grown ticks were collected from each ear of a pony, while many immature ones were left behind. The mere abstraction of blood must, in this case, be a very serious drain upon the system.

When one considers, further, the irritation experienced by travellers from the few ticks fixed upon them in their daily rambles, it may be safely concluded that the penetration of the countless proboscides into the skin of cattle must of itself be a source of great discomfort, especially as these animals are quite unable to get rid of them. Calves not uncommonly are destroyed by the formation of balls of hair in their stomachs; and in tick-regions this is undoubtedly due to an attempt to get rid of the parasites by licking and biting them off.

It is quite conceivable, then that ticks do really cause the death of multitudes of cattle on the great estates where it is impossible to examine them closely. We should, however, approach this part of the subject with caution. Sickly cattle are usually covered by ticks, while the healthy ones have only a few; but it is questionable whether the ticks are the real cause of their emaciation. The case of ticks seems rather to be analogous to that of scale insects on plants. The latter pests appear in great quantities at any period of stress, when from lack of nutriment or other cause the plants become weekly. Thus, in Antigua, there is a marked disappearance of scale insects with the commencement of the rainy season. It seems probable that the prevalence of ticks upon certain cattle is rather due to conditions of the blood or skin of the animal, closely connected with its general nutrition. This is an exceedingly important matter for determination, for upon it as will presently be shown, depends the only means of freeing the cattle from these pests.

Thus far the direct effects of ticks upon cattle have been considered. Certain alarming facts have lately been brought to light with regard to the relations existing between ticks and different well-known cattle diseases. The subject is by no means new having long been a fascinating one for cattle-breeders. The "louping-ill" or "trembling" of the north of Britain has been traced by some directly to the presence of ticks upon the sheep. The same may be said of a disease called "heart-water" at the Cape of Good Hope. Finally, the United States Department of Agriculture has for the last five or six years been conducting exhaustive experiments upon the connection between ticks and the Texas cattle fever, the results of which have appeared in the annual reports of the Bureau of Animal Industry already referred to. There is, in this latter case, present in the blood of the cattle suffering from disease, an infusorian which quickly destroys the red blood corpuscles. This minute organism has also been detected in the body of the tick. It has been again and again transferred from diseased animals to healthy ones by means of the tick, and tick alone.

Ticks, then, are in certain cases connected with the transmission of deadly disease. In how many more cases this is so remains to be investigated. It is quite possible that some of the obscure cattle diseases in different parts of the world are caused by ticks, and that other countries will, in their turn, be forced to face this problem.

There is now and then an outbreak of a severe skin disease among cattle in Antigua; and this disease does not appear to be known in the neighbouring islands. Judging from the climate and peculiar conditions of Antigua, the scarcity of water and lack of nutritious food for part of the year might be considered sufficient to account for a local disease; but there is also a large tick present, which has not been recorded from the other islands of the group. A loose theory has thus arisen that this "gold tick" is connected with, if not the direct cause of the cattle disease.

The evidence available does not tend to confirm this idea, but it is obviously impossible to solve the problem in the absence of proper appliances. I was led, however, to commence observations upon the gold tick, which may be of interest.

In considering the remedies for ticks, one is soon forced to the conclusion that direct measures against the parasite themselves will be of little avail. Methods of prevention are always preferable to those of cure, and in no case is this more so than with parasites of this class. Besides this, they are practically invisible at the most dangerous stage; and when we see the ugly, swollen, mature specimens, we know that their evil work is done. All large females should be carefully collected and burnt, however, as thus future attacks will be diminished.

The treatment of pastures is a very important matter. Here probably the parasite spends the greater part of his early life—usually on the ragged bunches of old grass left from previous years. The proper feeding or cutting of the grass, and the liming and draining of the pastures, will destroy myriads of the infant ticks or "grass-lice." For the sake of the animals, there is every inducement to render the pasture as nutritious as possible; and ticks do not seem to trouble the sleek cattle of the herd. It is an undoubted fact, moreover, that the improvement in food, due to change of pasturage, does in certain cases cause all the ticks to drop off infested animals. The first class of remedies will aim at cutting off the supply of ticks by treating the pastures.

The second class—one might say almost the only one which is attempted in the tropics—is the destruction of ticks upon the cattle.

The common method of tying the legs of the animal together, hurling it to the ground, and

smearing some tick-destroying compound over it, cannot be too strongly condemned, especially as there is no need for it whatsoever. Cattle may be handled with impunity if some form of cattle-bail is employed; by this means they may be driven one by one into a small trap, where they can be treated. But even this is hardly necessary if the application to the skin is in the liquid form; for with a powerful spraying machine, as many as one hundred cattle have been completely covered in the space of an hour.

Of pastes and powders and fluids recommended there is no end; and it will serve no useful purpose to give detailed lists discussing the merits of each. The points to be kept in view are that the liquid should be of an oily and non-poisonous nature, capable of clogging up the air-pores of the ticks. It shoud be cheap, and easily applicable without handling the cattle; it should, finally, not easily evaporate, or be washed off by the rains. A full discussion of remedies has recently been published by me, the following being taken from the summary at the end: "A number of types of washes for spraying are selected for description. All poisonous ones should be rejected, as there are non-poisonous preparations equally effective. Carbolic acid dips and other liquids, which evaporate quickly, need frequent applications, and should be discarded in favour of oily liquids or emulsions where the latter are equally effective. The best of all these is the kerosene emulsion regularly used for plants. There are many formulæ for the preparation of this; a useful one (for ticks) is given." The formula referred to is as follows: "In two quarts of boiling water dissolve half a pound of soap; remove from fire; immediately add one pint of kerosene, and agitate. In from three to five minutes the liquid becomes creamy. It may be stored in this form in bottles or barrels. For use, add three of water to one of emulsion; mix thoroughly, and apply with a spraying pump.' *

The third and most important class of remedies is closely connected with the nutrition of the animal. If we can render the skin or blood of our cattle so distasteful to the tick that the latter will not attach itself, we have a solution of the whole matter. We should confer immunity upon our animals, and, at one stroke, do away with the necessity of all the laborious and expensive methods now in vogue for the destruction of these parasites.

The first step in this direction has been taken; and, in various parts of the world, most excellent results are recorded from the addition of small doses of sulphur to the animal's food.

It has already been noted that the food of animals has an influence upon their infestation by ticks. Cases are not uncommon among cattle-breeders where a mere change of pasture will cause all the ticks to drop off. This change is obviously felt through the animal's skin.

It has also been mentioned that the ticks seem to congregate upon cattle in poor condition, while those with sleek skins are more or less untouched. Dr. Cooper Curtice (late of the United States Bureau of Animal Industry) suggests, as an explanation of this, that there is in well-fed cattle an oily condition of the skin obnoxious to the ticks; and this suggestion is the more worthy of consideration when we remember the aversion of these creatures to grease of any kind.

It is certain that *sulphur taken internally* will render the skin evil-smelling, by the exhalation of sulphuretted hydrogen, a substance highly obnoxious to all parasites. The following seem to be the physiological changes which take place during the passage of the sulphur through the animal's body to the skin. Sulphur taken in with the food passes the stomach unaltered. In the intestines a small portion is changed into sulphides of hydrogen and the alkalies. Part of these sulphides pass into the blood, and into the tissues from the blood, and act chiefly upon the central nervous system. The sulphides in the tissues are variously excreted. By the kidneys they are excreted as sulphates; if in excess, part is also excreted in the form of sulphides. By the skin they escape as sulphides, giving the characteristic foul odour to the perspiration, and somewhat increasing its amount.

The doses of sulphur should be small, but they should be constant. The form in which the medicine is offered to the animals will best be decided by the manager of the estate. With stall-fed cattle there can be no difficulty at all; but with the cattle of large estates, which are seldom handled and sometimes not seen for long periods, it will be necessary to prepare the sulphur with salt as a "lick," to which cattle will readily help themselves if it is scattered about.

The success of this sulphur treatment has so far been encouraging, both at the Cape of Good Hope and in the United States. Doubtless with continued study other similiar preventive remedies will from to time be discovered, and thus rid the stockowners of the tropics of one of their most dreaded enemies.
—*Nature*. C. A. BARBER.

* For further details, see papers in Leeward Islands *Agricultural Journal*, Nos. 1-3.

DRUG REPORT.

(From *Chemist and Druggist*.)

London, July 11.

ANNATTO.—Seed realises good prices. Twenty bags of bright quality from Coconada brought 3¾d per lb. today. A 44 bag parcel of good Madras seed is held for 4¼d per lb. and another lot of 17 bags was bought in at the same price.

ARECANUTS.—Still tending downwards. Two packages of fair quality from Ceylon sold today at 10s 6d per cwt.

CAFFEINE.—Easier. The market has quieted down considerably, and although 27s 6d is still asked on the spot, it is by no means easy to sell at that price. For October delivery the quotation is 22s to 23s per lb.

CAMPHOR (CRUDE) has been quiet all through the week, but this afternoon the syndicate buyers again appeared upon the market and purchased 100 piculs of Formosa camphor at 157s 6d per cwt. c.i.f., near at hand, thereby imparting a firmer tone to the drug. At auction 62 cases of Formosa camphor (1893 import) were bought in at 165s per cwt. Ninety-four tubs of Japanese camphor (1890 import) were also offered and bought in at 170s per cwt. which seems to be the lowest price. A bid of 167s 6d per cwt was refused.

COCA LEAVES.—From 10d to 11d per lb is asked for fair green broken Truxillo: a bid of 9d per lb. however, is to be submitted.

KOLA.—Tending easier. At the auctions several parcels were bought in at 1s per lb., for fair partly damaged seed and 1 bag of fair West Indian kola realised 11½d per lb.

OILS (ESSENTIAL).—At today's auctions several parcels of essential oils were offered, but the bulk was, as usual, bought in. Of Cinnamon oil 8 cases offered without reserve, and realised, respectively 6d and 3d per oz. Fair quality was bought in at 1s per oz.

QUININE.—A dead letter. No business has been reported this week. For second-hand German bulk 12⅝d per oz. is nominally asked, but 12½d would probably buy.

VANILLA.—At today's auctions a small supply sold at full prices:—Fine cottony, 7 to 8 inches, 19s 6d to 22s; 3½ to 5½ inches, 16s to 17s 6d; brownish, 14s to 17s 6d per lb.

WORK ON THE PALLEGAMA GRANT.—Mr. Russell Cox, who has lately taken over charge of Pallegama from Mr. Ross Wright, was in Colombo to-day on business, and we learn that considerable progress has been made with the new clearing on Pallegama. On the old clearing some 300 acres, abutting on the road from Pallegama to Nalande, were opened, and now the block that is being cleared is the corresponding stretch down the banks of the Kaluganga—about 210 acres. Felling is going on, and it is expected that the burn-off will take place at the end of the current month. When that is done the lower part of the grant will have been completely encircled; it will then be roaded; and, from that point, the *concessionaires* will work inwards, making roads on the watch-spring pattern till they get to the centre of their land, when they will make a straight road cutting through all the others to the lower end of the grant. The weather at Pallegama is very hot now; but the health of the place is good, and there is little trouble about labour. All the settlers on the land are doing well, and there is no lack of applicants for settlement.

SALE OF A DIKOYA ESTATE.

We learn that Mr. Duncan Skrine has sold Warleigh estate, Dikoya, to Mr. Papillon for £7,000, Messrs. Skrine & Co. continuing as agents. The property is a compact one of 250 acres, all but 10 acres in tea. Warleigh was well-known as one of the best planted and richest coffee plantations ever opened in a Ceylon high district. It first appeared in our Directory for 1869 as 184 acres of coffee and it continued to bear heavily long after leaf disease had wrought havoc on some of its neighbours. We well remember Mr. L. H. Kelly on one of his periodical returns to Ceylon expressing "indignation" (or something akin to it!) that Mr. Skrine should have allowed the coffee which had given him so big a fortune, to be overgrown and choked by cinchona; but the answer of a practical man was,—"Warleigh is more valuable as it stands now, than ever it was in coffee alone." Whether the proprietor was fortunate enough to harvest his bark before the prices fell, we do not know. At any rate, we may congratulate both seller and purchaser in these days of tea, on the satisfactory contract just concluded, and we believe Warleigh will long yield heavy and good crops of tea leaf.

PLANTERS AND THEIR LABOUR LAWS.

In the *Native* States of Southern India are in a sad pickle as to debts, advances and contracts with coolies and maistries who may bolt into British territory, there being no common law. Mr. G. L. Yonge on behalf of the United Planters' Association in writing to the Government of Madras says:—

"The planting industry has assumed very large dimensions in the Native States and fresh capital is annually being employed in opening up the waste lands. The cultivated area in the three States of Mysore, Travancore and Cochin, to which the figures now submitted apply, amounts to 132,200 acres, with an annual expenditure of R93,78,000. The average amount of advances now outstanding on these properties is R30 per acre, or R39,66,000, of which R10 per acre, or R13,22,000, are considered bad or have been written off within the last four years. *The greater portion of this large loss is due by coolies and maistries now residing in British territory, against whom under the existing law there is absolutely no remedy.*"

And further on:—

The value of all the lands held on planting tenure in the three Native States amounts to £6,356,950, and it is for the better safeguarding and conserving of this valuable industry that the Association asks for the intervention of His Excellency in Council. The Association recognises with respectful gratitude the sympathetic attitude of the Madras Government, and it ventures to hope that, when the Government of India is made fully acquainted with the large interests which are at stake in Southern India, it will no longer refuse to give its consent to such remedial measures as may be necessary and which the Association trusts may be supported by His Excellency in Council.

In conclusion, I have the honour to forward the following Resolution which was unanimously passed by the Association at the meeting held at Bangalore early in this month:—'That Government be asked to empower British magistrates in the districts, in which accused resides or in which the contract was made, to endorse and cause to be executed summonses or bailable warrants against the said accused issued by a magistrate in a Native State."

The Madras Government was favourable; but the Government of India saw difficulties in the way and so the *Madras Mail* advises:—

"The Secretary of State is the person to go to. We hope that the U.P.A.S.I. will decide to send to England representatives who are thoroughly *au courant* with all the facts, if necessary paying their expenses. There are 27 lakhs of good debts still outstanding in Mysore, Travancore and Cochin, and it will be worth expending some diminutive percentage of this huge sum in the endeavour to collect it. Lord Wenlock will be in England early next year, and we have but little doubt that he will do all he can to further the success of any representation that the planters of Southern India may think proper to make direct to the Secretary of State."

THE TEA CHEST QUESTION.

Ceylon planters are seriously considering the question of tea chests. The imported "momi" chests are apparently quite satisfactory, but the locally manufactured boxes, made of ½ inch planks, do not stand opening for sampling purposes and nailing down again, and split up and break in transit. Making the chests a little heavier, it is rightly argued, will not make them any better, but it does not seem to have occurred to anyone that a batten diagonally placed on each surface would greatly strengthen the chests, if the opposite diagonals were taken on the corresponding sides. What smashes up a box is being dropped on the corner.—*Madras Times*, August 1st.

YATADERIA TEA COMPANY OF CEYLON, LIMITED.

An Extraordinary General Meeting of this Company was held at the Office, 13, Queen Street, on 2nd instant at 3 p.m. Present:—Messrs. H. V. Masefield in the chair; J. H. Starey (Managing Director); D. Fairweather (Director); B. G. L. Bremner (Secretary); J. R. Fairweather, and C. M. Gwatkin; and by proxy W. W. Church, A. H. Dingwall and H. W. Hornby.

The Secretary read the notice convening the meeting.

THE MANAGING DIRECTOR said that as usual no accounts were presented at the half-year meeting, but the shareholders would be interested to know that the tea remaining for sale at end of 1894 had realised more than was estimated by 8,838 lb. The profit for the half-year to 30th June (not including 10% brought forward from 1894) was about 21% on the capital. The tea secured in 6 months was 265,547 lb equal to 48·28 per cent of estimate of which to 30th June there had been sold 129,640 lb all the tea had been shipped to London. Seeing that at 30th June last year a smaller proportion of the year's crop was secured—which is a circumstance to be explained by the incidence of the pruning—it was evident that the very favorable result was due to the recent good demand for "teas for price," such of the crop as had been accounted for having averaged about 41 cents per lb. The value estimated for tea not accounted for being only 35 cents.

On a shareholder inquiring whether a larger interim dividend than usual might not be declared it was replied that of the 129,640 lb sold at 30th June, only 92,440 lb had been accounted for; and the majority of the meeting expressed approval of following, the usual practice of moderation.

THE CHAIRMAN then moved that "an *ad interim* dividend at the rate of 12½ per cent for the half year ended 30th June, 1895 be declared." This was seconded as recommended by the Directors by Mr. J. R. Fairweather and carried unanimously. Vote of thanks terminated the proceedings.

MANGANESE.—The Government of India having learnt that there are increasing exports of manganese ore from the ports in the Madras Presidency, has asked the Madras Government, if there is a prospect of the continuance of the trade, to publish the figures in the monthly account of trade and navigation. It has also asked to be furnished with information as to the quantity and value of manganese ore exported from this Presidency to foreign countries during each of the last three years.—*M. Mail.*

THE MOCHA TEA COMPANY OF CEYLON, LIMITED.

GENERAL MEETING.

A general meeting of the shareholders of the above Company was held today, at noon, at the Office of Messrs. J. M. Robertson & Co., (the Agents and Secretaries), when Mr. H. Bois presided, the others present being Messrs. W. B. Kingsbury, W. Moir, C. Minto Gwatkin, R. Webster, and Captain Sandeman.

Mr. MOIR read the notice convening the meeting, and after that the minutes of the last meeting, which were confirmed.

ADOPTION OF THE REPORT.

The following is the

REPORT OF THE DIRECTORS.

The Directors have the pleasure to submit their report and accounts for the year ending the 30th of June last, which are, they consider, of a satisfactory nature.

Both estates have slightly exceeded their estimates, 310,810 lb., having been made against 305,000 lb. estimated for : 108 bushels of pounded coffee were also secured on Mocha.

The yield of tea is equal to 375 lb. per acre in bearing, and deducting capital expenditure and that on produce other than tea, the cost per lb. delivered in Colombo was 26 cents, while the nett average price realised was 57·49 cents per lb., as compared with 54·01 cents per lb. averaged last season.

The nett profit for the year is R102,534·40, which is 25·38 per cent. on the capital of the Company, and adding R992·52, the balance brought forward, there is R103,526·92 to be dealt with.

	R
Out of this, the Directors have already paid an interim dividend of 8 per cent., absorbing ..	32,320·00
A bonus has been paid to Mr. Maclure and Mr. Tench, the Superintendents on the Estates, of	2,000·00
Expenses on clearing on Glentilt have been written off	623·01
There has been transferred to depreciation account ..	7,580·20
There has been transferred to reserve fund ..	15,000·00
Leaving available a balance of	46,003·71
	R103,526·92

	R
Out of this balance it is proposed to pay a further dividend of 11 per cent. (making 19 per cent for the year) which will absorb ..	44,440·00
and to carry forward the balance of ..	1,563·71
	R46,003·71

The Company's properties now consist approximately of :—

834	acres	tea in bearing
15	,,	under one year
60	,,	grass land
125	,,	forest and fuel trees
21	,,	buildings, roads, &c.
1,055	acres.	

The estimates for season 1895-96 point to similar, or slightly better, results than those obtained in 1894-95.

Mr. F W Bois and Mr. E Christian having left the island, Mr. H Bois and Mr. W Moir have joined the Board at the invitation of the Directors.

The CHAIRMAN briefly moved the adoption of the Report. He had nothing of interest to add beyond the information contained in the Report. The working of the estate for the past year had been very satisfactory, and he had no doubt that the result of the coming year's work would be equally so.

Mr. WEBSTER seconded the motion, which was carried *nem. con.*

DECLARATION OF DIVIDEND.

Mr. GWATKIN proposed that a dividend of 11 per cent. be declared, making with the interim dividend of 8 per cent. already paid, a total of 19 per cent. for the year 1894-95.

Mr. WEBSTER seconded.—Carried.

The CHAIRMAN moved that Mr. W. Moir, one of the directors retiring by rotation, be re-elected to the board.

Mr. WEBSTER seconded.—Carried.

ELECTION OF AUDITOR.

Mr. GWATKIN proposed that Mr. H. J. Scott be appointed Auditor for the year.

Mr. WEBSTER seconded.—Carried.

REMUNERATION OF AGENTS AND SECRETARIES.

The CHAIRMAN then moved :—"That from the 1st of July, 1895, the remuneration of the agents and secretaries be as follows :—For office rent, Secretary's and clerical work, R1,500 per annum ; for tea shipped $\frac{3}{4}$ cent per lb.; return commission on freight for receiving, transporting, shipping etc ; $\frac{1}{2}$ per cent. commission on drafts drawn. as agents and secretaries of the company ; on tea sold locally half cent per lb.; and one per cent. commission on account sales for receiving, transporting, storing, fire insurance, opening and closing, sampling, arranging sales and collecting proceeds."

Capt. SANDEMAN seconded.—Carried.

VISITING AGENT'S REMUNERATION.

The CHAIRMAN proposed :—"That from July 1st 1895, the fee of the visiting agent for each estate be R500 for four quarterly visits."

Mr. GWATKIN seconded.—Carried.

Mr. KINGSBURY proposed a vote of thanks to the chair, and this terminated the proceedings.

[We are indebted to our evening contemporary for the proceedings, our own reporter having through a mistake, missed the meeting.]

"COCHRAN'S HANDBOOK OF CHEMICAL ANALYSIS":

AN INDISPENSABLE GUIDE TO THE MERCHANT AND BROKER AS WELL AS PLANTER.

MR. John Hughes, Agricultural Analyst, writing from London on July 12th in acknowledgment of a copy of the above work, says :—"I noticed some weeks since that a copy had been forwarded to the Chemical Society Burlington House, where it will be a useful work for reference in regard to Tropical Agricultural Analyses.

"The book is one that deserves to be generally known in order to be fully appreciated, for its contents are of practical use to the merchant and broker quite as much as it must naturally be to the planter. In regard to the latter I can safely say that if he will only carefully peruse its closely filled pages it should not be necessary to search elsewhere for practical information respecting the composition of Ceylon soils and manures. The work does great credit to the author who has compressed years of hard work, and many hours of calculation of the analytical results, into a practical form available for *immediate* use.

"Indeed the daily demand upon its contents, would suggest that a stronger and more substantial binding should have been added ; but this is a matter that can be remedied in future issues."

TEA, COFFEE AND CINCHONA PLANTING IN JAVA.

Mr. A. E. Wright returned today by the M.M. steamer after two months' absence, chiefly spent in visiting his property in West Java. At Singapore when coming back he met at Mr. Swettenham's residence, Mr. Talbot on his way to East Java, and as he thought not looking very well. Mr. Swettenham was in good health and spirits, over his new work, and as Acting Governor.

In Java, Mr. Wright has this time travelled a good deal seeing the principal districts of the island ; but we can only notice for the present, his "Wangiewatte" estate of over 1,600 acres—half in cultivation, half forest, all available, elevation 3,000 to 4,000 feet, such soil as Ceylon can nowhere shew - 490 acres coffee giving good crops for a few years ; but Mr. Wright has no faith in its permanency ; 240 acres of cinchona ; nd at present 105 acres of tea, about 70 in

bearing. Mr. Wright and his partner Mr. Bingley believe in tea and have already a Jackson's Roller and a big Sirocco available, while 53 maunds of selected seed sent from Ceylon have been supplemented by some very fine "Assam" purchased on the spot—showing that Java planters and merchants have begun to import the best Indian seed freely. Evidently "Wangiwatte" and many more Java properties are going to be gradually turned into tea plantations. The climate and soil are all that can be desired; the labour fairly plentiful—lazy but cheaper than in Ceylon. As for transport Mr. Wright travelled from Batavia by rail 100 miles to within 10 miles of the property and then had to ride. All produce is carried on pingoes for these ten miles by the Javanese who contract for this work and like it; but a cart road is talked of, before the present Private Company is turned into a Public one about two years hence. We do not know what the Shareholders of the Upper Maskeliya and other local Tea Companies will say to our friend's enterprise in thus pioneering a Tea industry in a new division of Java; but there is this to be said that Mr. Wright had this Java property in a manner placed before him three years ago in England, and something had to be done with it. He is full of faith in what tea at 3,000 to 4,000 feet will do in Java. Hitherto the 6 to 8 million lb. per annum of Java teas have been produced in the low-country and from poor "jât." Now the era is approaching of high-grown fine teas from superior bushes and the result will be an increasing and serious rivalry to India and Ceylon.

As for climate, we can vouch for Mr. Wright returning in capital health and spirits;—only a little bit troubled by his fellow planters in Ceylon not taking up the local Labour Question (with reference to next Spring's difficulties, and the extended Irrigation Works in Southern India) a little more seriously and practically.

THE CASTLEREAGH TEA COMPANY OF CEYLON, LIMITED.

The Directors of this Company have declared an *ad interim* dividend of 7 per cent in respect of the half-year ended 30th June. The crop prospects are exceedingly good, the estimate of tea for the whole year being nearly secured in the first half of the year. This should be good news not only for the shareholders, but for Mr. L. H. Kelly and Mr. Wm. Mackenzie who came in for a great lot of criticism last year, a good deal of it, as it would now appear, of an unjust character. The unfortunate shareholders who sold out at R65 or anything below par some months back, are to be pitied. The shares are worth now fully R140.

COFFEE PLANTING IN SERDANG, SUMATRA:—NO IX.

(From an ex-Ceylon Planter.)

I see that some one in Kandy (*C. O.* 15th June) has had his nerves shaken by the shrillness of my cock-a-doodle-doos. Tell him to let his hair grow quietly and knock off whisky, which is bad for nerves. At the same time I am glad to learn from him that "Liberian Coffee in Ceylon is *not* eclipsed." Nevertheless I would he could see things here for himself. I stated before that H. V. in Sumatra was present, but had to be sought for: and this is the case. Dr. Trimen in his report for 1894 (*T. A.* April 1895) says, "No doubt Liberian coffee suffers severely from leaf disease, but with liberal treatment and abundant manure it crops well."

I have seen most of the

LIBERIAN COFFEE

growing on the East Coast of Sumatra; and can safely say that it does *not* suffer from leaf-disease The suitability or the extra fatness of the soil is in my opinion, the reason for this. And further, my cock-a-doodle-doo does not extend to *all* of the land that I have seen in this country. Regarding purchase of seed, I was talking a few days ago to another ex-Ceylon planter who recently imported some Liberian seed from Ceylon, one reason being that it was cheaper than local seed. With respect to disease, he said certainly it was prevalent in Ceylon, at the same time agreeing with my views as to its non-prevalence here. He further said that he had put his Ceylon nurseries far apart from those planted with local seed, for fear of sickness. I have not seen my friend's nurseries: but I hope to hear the result. However, I am not afraid for the Ceylon seed: and to show the nervous man of Kandy that I am not crowing Sumatra against the world I give the following facts. One of the finest fields in this neighbourhood is grown from seed from an estate in Singapore which always suffered more or less severely from H. V. though manured up to the neck. The coffee here, which has had no manure, shows no sign of sickness: which looks as if seed even from sickly trees may do well, when planted in more suitable soil.

As promised, I visited

THE GENIUS OF THE TAP-ROOTS.

He was a tobacco planter who took up coffee: but knowing naught about the planting thereof, jammed his plants in anyhow: and was horrified to be told by a Java coffee man that all his tap-roots were turned, and his labour wasted. Having exhausted all the language at his command (he is not much of a linguist but a fine languageist) he set to work. His bushes at this time were considerably over a year old. He bored down the root on one side until he came to the first kink. Just above this he cut clean through the root with a pair of strong garden scissors: and again 3 or 4 inches below, leaving the bottom part of the root to rot in the ground. Then covering up the hole, he tied the offending member to the lowest primary, so that he should know his man again.

We saw this operation in process: but my friend and I wished to see results. So we were taken to the coffee which had been first experimented on, some four months previous to our visit. Boring down, as before, we came to where the tap-root had been cut, and there found a strong healthy sucker, going straight; and well-established in the ground. The coffee was in perfect health; though our host told us that for some weeks after the operation it lost colour; the rich dark green returning after the subsidiary tap-root had made itself felt. The man himself was a perfect poet, both for fluency and force of language.

VARIOUS PLANTING NOTES.

A CORRESPONDENT WRITES FROM SOUTH-EAST WYNAAD:—"We are having a very heavy monsoon. During the past three days the average daily rainfall has been 2·55 inches and we are about 12 inches about the average to date for the year. Coffee generally looks very promissing, but would be the better for a little sunshine, which I think we must soon have, as the wind has shifted a little during the past 24 hours, and there was some thunder yesterday.—*M. Mail.*

COFFEE IN GERMAN EAST AFRICA.—The German newspaper *Das Echo* says that Dr. Richard Hindorf of Ruhrort, well-known for his activity in Wilhelmsland, German East Africa, and German South Africa, and now in the service of the *Deutsch-Ostafrikanischen Gesellschaft*, will shortly proceed by way of Ceylon and Java to East Africa, and that he will arrange to visit plantations of coffee in Ceylon and Java, where he formerly stayed for some time, in order to acquaint himself with the cultivation of tropical plants. He will also endeavour to procure skilled laborers. The coffee plantation at Usambara was laid out by him some years ago.

Correspondence

To the Editor.

CEYLON FIBRES IN REQUEST.

London, 29th May, 1895.

Sir,—My letter of 15th March was not written with any view to publication, but I have none the less to thank you for giving so much prominence to the subject.

I have also to thank "X" for his remarks, but it does not appear to have occurred to him, that if the proper scientific names could have been given, and the "habitat" known of any fibre or other material in demand, one would not have required to trouble public-spirited men like yourself to call attention to the subject, orders would rather have been sent for what was wanted, through the usual commercial channels.

Unfortunately whilst our countrymen—and may I say it, Colonists also—have been apathetic, other nationalities have been active in developing their over-sea resources and it has fallen within my own observation, that during the past year or two very large profits have been made in similar materials by our more active continental competitors who for obvious reasons withhold the *real* names of the plants from which the materials are obtained.

Surely we are not prepared to admit that French Colonies for example possess a monopoly of the valuable products which their greater enterprise have lately brought into the market? Rather should we endeavour to stir up all whom it may concern to make such inquiries, investigations and trials as may enable them to develop the supply of suitable novelties of a'l kinds.

The various collections of products in the Imperial Institute, Kew, and elsewhere are highly interesting, and valuable for many purposes, but those who would keep abreast or ahead of their competitors must look further afield and endeavour to utilise for themselves more of the natural products of such countries as Ceylon.

I may add for the information of "X" that "Pia-mater" is the name of the "innermost of the three membranes covering the brain."—not an inapt name for a medical botanist to give to the inner membrane (or shaving) of a plant. The French call it "choux choux" (or cabbage stalk); consequently the cabbage palm has been suggested.

I have a beautiful specimen described as "Arum Exculentrum" sent by an American Botanist from the tropics (very similar in structure and grain to the common arum). This is a valuable product.

Specimen No. 3 has been described as from the "Cryptomeria Japonica." I have seen similar specimens from the narrow leaf of a palm of which the "Raphia Raphia palm" yielding the ordinary Raffia may be cited as a type,—Freycynetia, &c.

At present the demand is running mostly upon the No. 3 class of fibrous materials. I would suggest the skins of the long leaves of the "Pandanus" or screw pine as specially worth attention, and any similar or other plants yielding suitable skins should be sampled.—Yours truly,

C. E. COLLYER.

Note on above:

Pia is said to be a shaving from the cabbage palm. *Areca Oleracea* is known as the cabbage palm of the West Indies: but the *Sabal Palmetto* of the South United States is also there known as the cabbage palm or cabbage tree. As the word cabbage refers to the edible terminal bud of palms, it is probable that the term cabbage palm is given to different species of palms in different countries: compare "Coconut-Cabbage." A specimen of Palmetto is to be seen at Peradeniya. In Mr. Collyer's letter the reference to *Pia* and its derivation and the account of how the name cabbage palm was hit upon, leads one to suspect that the shaving is probably from the *cabbage* (or terminal bud) of palms. I shall endeavour to test this theory.

I see that Mr. Collyer again suggests that the leaves of the screw-pine (Pandanus) should be looked to for "Raffia." I think there must be a good deal in *the way of getting out the skin* of screw-pine and palm leaves. It is not so easy for the uninitiated to do it, I am making further trials.

CEYLON TEA EXPORTED TO MOIST CLIMATES: A PRACTICAL SUGGESTION.

London, June 25th, 1895.

Sir,—With your permission I would like to put before some of your advanced tea producers the necessity of adopting some plan to meet a requirement which has come specially to my knowledge by those with whom I work in our colonies in Africa, especially in the moist climate on the West Coast. The men in the Botanical Garden found that the tea being supplied to them, for instance at Old Cabaral was quite other than that which they had been accustomed to get in England. They ordered out small canisters, but these did not seem to answer because they could not be packed in bond. It then occurred to me to send out to Ceylon what are known in the trade in England as Canisters with self-opening lids. I therefore had some cases prepared to hold 4 tins, each tin, as far as we could get at the weight here, would hold about 25 lb., making 100 lb. of tea for a chest. These are now on their road to Ceylon, and the object is that they will arrive in the docks with the gross and tare marked on them, and these chests can be shipped to any of our clients, so that when a store-keeper in a town receives one of these chests, he can sell off 25 lb. in a tin. The party who buys this will be able to take out during the dry part of the day, just what is required for a week's consumption, put this air tight lid down again, and there is a canister perfectly secure, and the Tea will keep fresh to the last. As it is now, the chest is opened, a good deal of it gets spilt and lost, other parts get mouldy of course in a few hours with the damp, and the result is that a good cup of tea can hardly ever be depended upon.

I want to carry this point one step further. As I use these tins very largely and they are very much liked by colonists and people abroad, and they are very simple, I would wish to inform tea planters that they can order out the self-opening lids by the gross, then if they have no machine for making or bending the top plate of their tin box they can order out a top sheet with the lid fitted, so that all they will have to do will be to solder on the sides and the bottom from ordinary tin plate.

In conclusion I would wish to remark that, not having had any experience in this department in Ceylon, I make every apology for perhaps having brought forward a thoroughly well-known threshed out subject. On the other hand the facts that I put forward may point to the necessity of some such plan as I have suggested being adopted, as the colonies I have referred to and have been in communication with know nothing about this subject, and have never seen tea sent out in self-opening tin canisters nested in a case.—Yours truly,

THOS. CHRISTY.

CEYLON TEA AND TEA-SWEEPINGS: WHO WERE NOT AND WHO WERE TO BLAME:

CEYLON TEA PACKAGES PRAISED.

London, June 28th, 1895.

Sir,—The remarks based on your London correspondent, on page 576, headed "Mr. Christy of London on tea-sweepings and tea sales," has naturally, I think, irritated the gentlemen who own the Tea Warehouses of London, and some of them I have seen, feel hurt that all are brought under the lash when they have, up to the present time, endeavoured to hold the scales equally between the various interests affected.

In every letter that I have addressed to you or any information that I have given I have invariably stated how very much I am indebted to the majority of the owners of Tea Warehouses and to the gentlemen conducting them for the great assistance they have rendered to me. While I have in hand an "explanation" which is only due to these Tea Warehouse-keepers of London I would like, with your permission, to add the dates at which I commenced to work:

In 1888 I found that tea-sweepings were such an incubus to the warehousemen who did not know how to get rid of them that they paid as much as £5, and very often much more, for each clearance or riddance of a parcel of tea-sweepings. These tea-sweepings were sold by the parties who took them from the warehouses at a low price, to Germany, but of course very remuneratively, as they paid nothing for them: part was used for food purposes and passed through a very large tea establishment that was erected at Hamburg, and part was used in Germany for the manufacture of caffeine.

Knowing the state of affairs that existed I applied first to every one of the Government establishments, starting with the Custom House. Some of the replies I received were not even polite. Nothing daunted, I persevered, and put copies of the letters together with my applications, before Sir Frederick Dixon Hartland and Sir John Lubbock. I then went to the wholesale manufacturing Chemists who were most likely to work at such a product as caffeine. They smiled at me, saying "We wish you good luck and shall be very glad if you can carry this point. We have tried for years, and have only received snubs." Notice of motion was given in the House and Mr. Goschen was supported by the whole of the official element in the different departments in ridiculing the proposition that the chemical, Caffeine should be made in this country, as it was in Germany, from a material which was a waste product and actually cost money to destroy.

Mr. Goschen was eventually convinced that an alkaloid only was intended to be obtained and referred the matter to Mr. Prowse, the Secretary to the Custom House, who sent for me, and, to cut a long story short, with the assistance of Mr. Cobden Samuels, the chemist to the Custom House, a material satisfactory to all concerned for rendering the tea-sweepings totally unfit to be ever used for food was discovered in asafetida and lime. Within 6 weeks from this it was permitted to denature the tea-sweepings and refuse Tea in England.

The Wharves were, as a rule, quite as dubious as any of those interested, and felt confident of constant irritation and trouble from the Customs. Suffice it to say that they have not had one single instance to ground their fears upon in the work ever since 1888, so perfectly had the Secretary of the Customs arranged all the detail. In 1893, every wharf but one passed their tea-sweepings through our house to the manufacturers. By this time stocks of tea-sweepings were getting low in Germany, and the foreigners were able to bring sufficient pressure to bear to induce some few of the warehouses to allow them to have tea-sweepings again. They disregarded any interest I might have in the tea-sweepings, which only amounted to 3/ per ton, and barely paid the expenses of stamps, clearance at the Customs and arranging cartage of the tea under the supervision of the Customs officer, and other incidental expenses.

These Wharves who have not acted as I consider fairly towards me ignore all the trouble and expense I have been to; they ignore also the interests of the tea-producers and of the English manufacturers of Caffeine. They ignore also the special permission which had been granted by order of Mr. Goschen and the work carried out by the Custom House, which was a positive gain at the time of the transaction to these wharfingers, as I have shown in the former part of this letter, and this in spite of the Port Order No. 33, 1888 Regulations for the delivery of damaged tea free of duty for the Manufacture of Caffeine.

After reiterating all the facts, as you no doubt will be addressed by some of the Bonded Warehousekeepers I would like to ask them in reply—

1. If they have sold tea-sweepings to Germany after the Port Order was issued, stating that no further Tea sweeping should be shipped to Germany.

2. As another order has been issued stating that tea-sweepings may be denatured in this country and shipped off, whether they are now selling or whether they intended to sell their Tea sweepings (which are the produce of tea produced in the British possessions) to foreigners to be ground up under Customs supervision in this country and shipped abroad, thus entirely working against the British industry and British trade, and in direct opposition to the work done by the Chamber of Commerce, who assisted me with their valuable support when asking the favour of this Port Order in 1888.

Another question that it would be interesting to get them to answer is—

3. If the Caffeine manufacturer in this country do not offer them a higher price than they can obtain from anyone else.

I must ask you to accord this letter the prominence that you have put upon the writing complained of in your widely circulating journal.—Yours truly,

THOS. CHRISTY.

P.S.—Important matter is often consigned to a postscript, as in this instance. "The tea packages from Ceylon are so well put together that there is a minimum of leakage." This is the experience in some of the tea warehouses; hence the volume of tea-sweepings is decreasing.

WIND GALORE IN SOME PLANTING DISTRICTS.

New Galway, July 1st.

DEAR SIR,—The letter of the local "Times" correspondent quoted by you last week would appear to give this district "the cake for wind." Well, certainly we have had it pretty stiff lately doing considerable damage to young timber trees, store roofs &c., and although we must not forget the incident of the grindstone that was dislodged and carried away by its action on lower Ambawelle during the time of the great Alister of Bagpipe renown, the Kandapolla district can now cap that, as during the storm that laid our U. P. M. low, a stone mile-post of the usual dimensions—i.e. about 4 feet long and embedded more than half its length in the ground, was overturned, to say nothing of the scores of large *acacia melanoxylon* and other trees uprooted, twisted and broken off.

The mile-post above alluded to is either the 7th or 8th from Nuwara Eliya—at any rate it is just above the coffee store on Maclaren's Park estate, and any one so inclined can "parka" it by the road-side unless it has been carried farther away or re-erected since Saturday last.—Yours,

WINDY CORNER.

HYDRAULIC LIMESTONE IN CEYLON.

July 16.

DEAR SIR,—Re your article on this subject (appearing on page 132) you will find hydraulic limestone in a cave just below the high road a little beyond Padiyapellella in the Maturata district of Nuwara Eliya.

—Yours truly, M.

LIMESTONE AND CLAY IN THE SOUTHERN PROVINCE.

SIR,—I have read your recent article *re* "Hydraulic Limestone," and as you seek for information whether the magnesia limestone is to be found elsewhere, I must refer you to the Southern Province. The hard palish-yellow stone is to be foun

from the residence of the late Perera Mudaliyar at Unawattuna, in the Galle district till about Pelena in the Matara district, and has been largely used on the public works and private dwellings. You attribute the fertility of the soil of the Jaffna peninsula to the presence of an extensive formation of limestone, but I can assure you that the fertility of the soil between Unawattuna and Pelena is not in any way behind. Anyone who has visited this part of the country can well speak of the luxuriant growth of coconut trees and the well-bearing of nuts. Another thing unknown to many is that a good deal of the limestone, is not collected in outlying islets in the sea, but dug out from the ground where coconut trees over fifty years old are found growing. The veteran Government Agent at Galle should obtain fuller particulars on this point and make them public.

Mention has also been made by you that no good clay can be found in the island for the purpose of making cement. I should wish to know whether the clay in and around Dikwella, a village mid-way between Matara and Tangalla has been tested by anyone; it is the best clay I have yet seen and bids fair to be of great use hereafter. The pottery turned out at Dickwella is harder than that you see in the Colombo market; and on this point the energetic Assistant Government Agent of Matara, Mr. Lushington, should be able to furnish interesting data as well as send specimens of pottery to be tested.—Yours truly,

EX-MATARA RESIDENT.

THE FUEL QUESTION: WOOD-FUEL COSTING 3 CENTS (AGAINST COAL 12·5 CENT) PER LB. MADE TEA?

Madulkellie, July 17.

DEAR SIR,—I have read with interest in the columns of your valuable journal the report of the Dimbula P. A. by which I was surprised to see that wood fuel is costing some estates over R2·50 per yard delivered at their factories. This seems quite prohibitive. Would not coal be cheaper? I should be very much obliged if any of your readers can give me the results of experiments with coal.

I have been told that coal in one engine in this district costs 1·25 cts per lb. made tea. From carefully kept figures I calculate that wood fuel at R2·50 per yard in my engine would cost quite 3 cts per lb. made tea. The fuel question is daily getting a more serious one and wood fuel is by no means plentiful.—I am, sir, yours etc.

ECONOMY.

THE TEA-BUSH, TAP-ROOT, AND MANURING.

South India, July 20, 1895.

SIR,—With reference to your correspondent's remarks regarding Mr. Hughes' statement *re* the tap-root of the tea-bush, in connection with manuring, the latter-mentioned gentleman is made to appear ignorant of the principles of agriculture! How often will it be necessary to repeat the fact that deeply penetrating tap-roots are almost entirely destitute of the fibrous spongioles which alone are able to appropriate nourishment from the soil?

An examination of any deep-lying tap-root will convince the most sceptical on that point. It is true that even the dense, woody, cellular construction of a tap-root permits of the ascent of water, and it is equally true that salts in solution may be found in that water, *but*, (and this is an all-important "but") no nitrogen is present, and that owing to the following fact. The food of plants must first be nitrified before becoming fit for absorption and assimilation.

This necessary preparatory process of nitrification does not go on in the soil at a greater depth than two feet below the surface—consequently below that depth the tap-root finds no oxidized, nitrified food fit for appropriation. Your Ceylon soils being much more open in texture, as a rule, than the dense Indian soils, the process of nitrification may go on a few inches deeper below the surface, but virtually there is no appreciable degree of nitrification going on that is of any practical value to the plant, at a greater depth than two feet below the surface.—Yours faithfully,

J. McKENZIE.

PEPPER-VINE GROWING:—A SERIES OF QUERIES BY A WOULD-BE PLANTER.

SIR,—I have a small Estate in Hewagamkorle about 12 miles from Colombo in the Cotte Road near the property once owned by Mr. Grinlinton. The soil is cabook and clay. It is partly planted with coconuts, and though the trees are about 15 years, they do not bear well. I intend trying pepper on it; with this view I procured your valuable book "All about Spices" from which I derived much information. But before I begin operations, I wish to supplement the information obtained from that Book with the following particulars, which I hope some one of your readers will oblige me by furnishing:—

1. Is the soil suitable.
2. Is it advisable to allow the vines to creep on the coconut trees; will the pepper-vine injure the coconut trees?
3. What is the effect of pepper among cinnamon?
4. What are the native (Sinhalese and Tamil) names of the following trees: Dadap, Kapok, Erythrina Indica, Nava, Halamba, Madre de Cacao, Chingkariang, Inga Saman, Boonglai, Jacca tree (these names are taken from the Book on Spices.)
5. A practical planter in the same book says that vines which grow on non-deciduous trees bear better; of the trees mentioned in 4 and of the following trees which are non-deciduous. Jack, Godapora, Goraka, Thiapora, Mille, Imbul Suriya, Erabaddu, Coconut, Arecanut, Hikgaha, Albizzia, Mollucana.
6. Which of these trees enumerated in 4 and 5 grow fast, or rather how long will they take to grow so large as to support pepper vines; and which of these trees will the pepper vine injure?

Thanking in anticipation.—Yours faithfully,

S. W.-N.

P. S.—What product will best suit this soil and climate?

COCONUT PLANTING AND THE BEETLE ENEMIES OF THE PALM.

Singapore, July 22nd.

DEAR SIR,—I have been told that you are a great authority on the diseases of coconut trees. I should deem it a great favour if you would tell me if you know of any cure or means of exterminating the Red Beetle. Here none is known, and the place is gradually being eaten up by them. Do you consider it possible to save a tree when once attacked by this beetle? Again, I should much like to know the Ceylon method of catching the Black Beetle,—and do you do anything in the way of stopping up the holes made by them. As I am in charge of a plantation here, any details you can give me on the subject would exceedingly oblige.—Yours faithfully,

R. DUNMAN.

P.S.—Is there any reliable pamphlet published on the subject of coconut-growing?

[We regret to say that our Manual "All about the Coconut Palm" is out of print; but a fresh edition is being prepared, and in it Mr. Dunman will find all the information he requires, including the mode in which the black and red beetles are killed on plantations in Ceylon. There must be Tamil coolies in the Straits, we should think, who know the kind of iron rod with a bend or hook at the end, used to get at the big black beetle in his burrowings in the top and heart of the palms. The red beetle is a far more serious customer; but there is nothing for it, but to hunt him down and cut down and burn at once all trees affected beyond cure which probably contain a family of the beetle. Clear the estate too of all rubbish likely to give cover and then the attacks ought to be greatly diminished until they finally disappear. —ED. *T.A.*]

THE PLANTERS AND THE INDO-CEYLON RAILWAY.

DEAR SIR,—Your recent article on the P.A. Committee's memo. on labour is much to the point. It is evident from what appears in your contemporary's article that the Chairman's draft was considerably modified in Committee, and if the editor of the "Times" is correct, for some reasons properly so. This must be said for the Chairman, that his draft may not have conveyed his own views say on the railway to South India, but may have been intended to summarise the opinions in regard to it held by various sections of the Planting Community.

What do the Committee mean by the crude paragraph:—"The question of the Indo-Ceylon Railway seems hardly within the range of practical politics as yet"? If the Committee had added "but it will be no fault of the P.A. Committee if it continues in that state longer"—a very excellent point would have been carried in support of a movement that must better our condition as employers of the Indian coolie. You hear some, but very few planters saying:—"If we join our estates to the Indian villages by Railway, we place Ceylon in the same position as estates, say in Travancore with the labor in the villages adjoining them." What nonsense! It will cost the Indian labourers at least *R3 to 4* going singly, or. R2 to 3 in gangs from Matale to India, and that is a sum the India coolie will think twice before he spends. For every cooly who will leave to go home by railway we shall have two coming back, for in any sudden difficulty arising on an estate from leaf coming in too abundantly, the Manager will be able to send a Kangany with *R50* to the Coast in 30 hours, and in a week he would return with a gang of coolies. If every planter will take the trouble to think over this matter, he will see that the Planting Industry must be benefited by quick, comfortable, and safe Railway transit service from India to Ceylon. I can understand the little magnates of our Ceylon Civil Service having the feathers in their little wings ruffled by the idea of Ceylon having its Civil Service carried on more in harmony with its size if we had closer communication with India; but I see no reason why the Planting community need fear any harm to its Indian labour supply, when brought into real touch with the regions from which that supply is drafted.

If the Chairman took the trouble to draft what was on the whole an able Memo., so as to bring the discussion on the Labour Question to a point, I believe he could bring his clear level head to draft a Memo. on the pros and cons of the Ceylon-Indian Railway, that his Committee would lick into shape so as to prove conclusively that our Planting interests will be most materially strengthened, so far as its labour is concerned by a Ceylon-Indian Narrow Gauge Railway.—Yours truly, PROGRESS.

CEYLON AND INDIAN TEAS: PURITY AND PROTECTION.

July 27.

SIR,—You "pause for a reply." You shall have it! India sends 140 million lb. of tea into the markets of the world and its purity is unchallenged, although 5 million lb. of China tea is annually imported for business (? blending) purposes into Calcutta.

Ceylon sends out 90 million lb., has a prohibitory import duty of 50 per cent on value of tea (monstrous anomaly in this year A.D. 1895) to ensure *purity;* and yet on at least two occasions, some of its tea produce has been stopped by Customs authorities as "unfit for human food."

One fact more:—Ceylon tea averaged 8½d per lb. last year, falling year by year, notwithstanding its protection of 50 per cent duty. Indian tea averages a penny more and improved its position last year, notwithstanding that all the protection it gets is 5 per cent.

Send the above and your yesterday's paper with my compliments to Mr. Chamberlain and let him see how his latest Colonial C.M.G. has been arguing—as a Manchester man and Free Trader. I enclose my card.—Yours truly,

CYNIC.

THE "LADY BEETLES" IMPORTED TO FIGHT "GREEN BUG" ON COFFEE.

St. Leonards, Nuwara Eliya, July 28th.

DEAR SIR,—I regret to inform you that the Beetles "Vedalia Cardinalis" to destroy green bug sent by the State Board of Horticulture, California, to Mr. E. E. Green have all arrived dead, owing to their having been packed in a closed pill box.

I have written to Mr. Cran, Chairman of the Board of Horticulture advising him of the condition the beetles arrived in and asking him to forward another lot suitably packed.—I am,

CHAS. H. BAGOT.

PLANTING IN THE NORTH BORNEO: A LETTER FROM MR. PRYER.

Sandakan, July 7th.

DEAR SIR,—A further few notes from here may not be uninteresting to your readers.

COFFEE PLANTING is always more or less in progress, but not on a quarter the scale it ought to be. Still a few more acres here and a few more acres there are put in almost monthly, while the existing gardens are always improving. Some of my coffee is now ten feet high, of a handsome pyramidical shape, and the branches cracking with the weight of fruit. This last fact is largely owing to dry weather during the last three months having retarded ripening and as soon as rain sets in, picking will be proceeded with rigorously.

I was looking at some 10 months' plants a few days ago, they were over 4 feet high, well shaped, and were showing fruit as large as small marbles, with any quantity of buds forming, these were from 8 leaf seedlings; but the latest idea is to put in plants already

showing laterals, the nurseries must be close to the fields in order to do this, and the planting requires a little extra supervision, but six months' weeding is saved.

As to thinning out crop or entirely stripping young trees as recommended by some people, I must say that after you have done nothing but spend money for two years or so and when you do see $40 a picul clustering on your trees, to pull it off and throw it away does seem to me a curious thing to do.

As for the practice of the thing; first the planter makes a big hole, then he fills that hole with the most fruit-producing food, then he severely handles the trees so as to further force on fruit and then when the fruit comes he pitches it away! The whole thing is as tho' one took a child, fed it up on turtle soup and sherry, pork chops, cheesecakes and Christmas pudding, and then was surprized that he got bilious, and proceeded to give him castor oil. If what is wanted are trees that don't bear so soon, all that has to be done is to make small holes and fill with poor soil. But why people should prefer their trees not to bear soon, seeing that the main purpose and intention of a coffee estate is to earn income as large and as soon as possible, is inscrutable to me. As for any idea that early cropping is hurtful I have never seen any evidence of it, while it is always one's best trees that crop earliest. Mr. Hill in Selangor judging from his crop returns was not afraid of raking in the dollars as soon as they showed.

As to other cultivations, COCONUTS continue to be put in, and all promise well. The Gambier gardens are constantly being enlarged, and look like becoming of importance soon; a little cotton is being tried in three or four places, and there is a tendency to nibble at sugar and Manila Hemp.

Beyond this, matters in the country are not very bright, the tobacco news is the reverse of good and if the Chartered Company does not mind it will find a serious falling-off in its exports and consequently in its revenue. Up to the present its policy has been of a Micawberish character "waiting for something to turn up." Nothing does turn up, rather the contrary, and meantime any quantity of opportunities in coffee, sugar and other things are allowed to slip and the magnificent soil remains disregarded. However, the shareholders are clamouring for more action, and a new policy has been inaugurated. At first a few slips and errors may be anticipated, but the attitude of the shareholders and their instructions to their Directors seem to be: "Find out for us what this country really can do." It cannot be too strongly impressed upon them that the main resource is the soil, and in view of the shareholders demanding real action, it is to be hoped that this, the future mainstay of the country will have that attention devoted to it that it deserves, and which it has never yet received. If not, disaster is inevitable.—Yours very truly, W. B. PRYER.

WHO FIRST INTRODUCED THE GREVILLEA (SILKY OAK OF QUEENSLAND) INTO CEYLON.

Fairieland, Kandy, Ceylon.

SIR,—Can you or any of your numerous correspondents inform me who has been the benefactor to Ceylon, in introducing the "Grevillea" into the island?—Yours, &c.,

SHELTON AGAR.

[We should suppose it came in first through the Royal Botanic Gardens and we know that the late Dr. Thwaites was very strong in his recommendation of it as an ornamental tree. He persuaded the late Mr. A. M. Ferguson in the "sixties" or "seventies" to try grevilleas in his garden at Aloe Avenue; but the sea-air played havoc with them. The proper altitude in Ceylon is from 1,500 to 4,000 feet above sea-level.—ED. *T.A.*]

FRUIT IN UVA—AND THE MARKET?

July 10.

DEAR SIR,—Now we have our usual dry and hot season in Uva with gusty wind, more especially during the night and up to say 9 a.m. in the morning. Thunder showers are always welcome visitors to us in Uva at this time of the year, and the tea estates in Uva Province do tolerably well with occasional showers of rain till October and the periodical rains arrive. Just now our oranges are ripe on the trees, and you may take my word for it that there are few better *climates* for *oranges, et hoc genus*, than the Province of Uva affords. Sun and clear skies are essential climatic constituents, for *all* fruit-yielding lands, and the little *sheltered valleys* of Uva could be made to produce *lemons* (and they pay well), limes, oranges and shaddocks in great abundance. When choosing a spot for an orchard it is necessary to seek for a well-sheltered hill-side or valley, and if the soil be fairly fertile, it will do well in Uva; and if the land is poor C. P. manure can be used.

I wonder the Burgher landlords in Badulla do not pay more attention to their orchards than at present and extend them and introduce fresh varieties of fruit-bearing trees. Hakgala Botanical Gardens could I fancy supply young and good trees; next October I hope the Badulla house-holders will plant out fruit trees, they will yield them a nice income in a few years, with a Railway now to Bandarawela. I sent a basket of delicious oranges the other day to Colombo, each orange wrapped in thin paper, and they arrived in *perfect* condition. "OLD GARDENER."

P.S.—Just now a lady says it is all very well to grow oranges, mangoes, &c., but how about the ready market for them? I at once reply: Colombo with large steamers arriving daily and crowded with *thirsty* passengers, will buy *1,000* oranges a *day and at a fair price.*

[Colombo certainly ought, and yet we have heard of Matale men losing by consignments of fruit. Oranges have been as high in Colombo as 25 cents each, though usually 5 cents.—ED. *T.A.*]

VARIOUS PLANTING NOTES.

THE COMPANY for the working of the Pamanoekan and Tjiassem lands has issued its annual report, which shows that a loss has been sustained in the preceding year of fl 268,346. This loss is ascribed to the small coffee crop of about 9,600 piculs; to losses on timber of fl 112,488; losses on rice of fl 54,005; charges for law suits fl.16,323, and further to a loss of about fl.80,000 on the working charges on the preceding year. Against this there is a profit of fl.240,000 on interest account. The prospects for coffee are favourable, and the estimate for this year exceeds the crop of 1894 by 4,000 piculs, good prices have already been made for the crop.—*L. & C. Express.*

THE OUTLOOK FOR INDIAN TEA.—Says the Calcutta Commercial Correspondent of the *Pioneer*:—

Calcutta, July 20.—The outlook for Indian tea is decidedly promising. The consumption is extending to Persia and Russia as well as in the United Kingdom, Canada, the United States, Germany and the Australasian colonies, which means that although supply is increasing, the demand seems likely to keep pace. Tea shares may therefore be considered a safe medium of fair interest-paying investments at the present time, and this is confirmed by the advanced prices of all stocks.

HAPUTALE, July 31.—Coffee is doing splendidly up here, and estates are giving crops such as they have not done these last six years. Of course, it is taking it out of the trees considerably; but at present prices proprietors are getting returns from the old berry that few of them expected to secure again. Tea is also doing very well, generally speaking. Undoubtedly our tea, like the coffee in the old days, takes a long time to show up, and is very slow maturing; but Haputale will by-and-bye be as good a tea district as any in the island. Its climate is not forcing like most other districts, and the growth is slow, but there is the soil, and one of these days there will be a rush to buy estates, and the voice of the company-promoter will be heard in the land.

TEA EXTENSION IN THE SOUTHERN PROVINCE.—Mr. J. Simpson Scowcroft, the well-known planter returned to Colombo today (5th) from Galle, having been engaged on the work of further opening up Mr. Jeronis Dias's property at Matugama in the S. Province, where Mr. Dias will eventually have a very large tea property. He originally bought 650 acres, 200 of which were lately opened up in tea by Mr. Scowcroft while the latter is now busy felling the timber on another 300 acres, and he expects to burn off in a month. The proprietor of the land is negotiating for the purchase of another 450 acres adjoining his present proporty, and has in view the acquirement end of 1,000 acres in all, in which case he will be the owner of one of the largest estates in the S. Province.

THE CASTLEREAGH TEA COMPANY.—This concern, until the end of last year, and while it failed to even approach the prospects formed of it, was naturally a "much-abused company." With no interim dividend for 1894, the shares—eleven months ago—stood at R65; but on the strength of a rather unexpected dividend of 8 per cent. for the year, they reached par in March last. Then, as it became known that the estimate of yield for 1895 was being realised practically in half the period, the price advanced until the shares were quoted, as now, at R135, ex-dividend. The dividend for the half-year ending June 30th—paid on Saturday last is 7 per cent., although, we understand, the profit for the same period ran into "double figures." The estimate for 1895 was 130,000 lb. of which 125,000 lb. were secured in the first six months The superintendent has raised the figures for the year to 180,000 lb. only, to be on the safe side, but it is expected that this yield will be greatly exceeded. Mr. A. F. White is the manager of the estate, and he deserves more than a word of praise for his work.

COFFEA STENOPHYLLA.—Read the following report from T. J. Ferguson, Esq., dated Calicut, 27th February, 1895:—"In reply to your letter of the 16th instant, I planted the small supply of seed (in cherry) of the Coffea stenophylla immediately on receiving it from you about the end of June last. Only 10 ir 12 of the seeds germinated and I only succeeded in raising 8 plants, all were weak and sickly at first' several seeds germinated 2 months after the others. I got fine well-grown healthy plants which have now 3 pairs of primaries, and average eight inches in height I have two healthy young plants with five pairs of leaves, and one sickly plant with four pair of leaves. One of the largest plants has been planted out in the open here for some months among some Arabian and Liberian hybrids fine robust plants among which the Sierra Leone plant looks a dwarf. I am sending all the plants, except the one referred to above, to be planted in Wynaad. A hybrid between these and Liberian might prove a valuable addition to the Planters' fields. It is difficult to believe that the Sierra Leone plants can bear large or even ordinary crops, it is so much smaller than the smallest Arabica of the same age."

Reports also were received from Mr. Woodrow dated Poona, 26th February, 1895; Mrs. H. Munro, dated Peermaad, 25th February, 1895; Mr. W. Gollan, Saharanpur, dated 7th March: and Rev. Richter, Coorg, dated 22nd February 1895, stating that none of the seeds sent germinated.—*Proceedings Agri-Horticultural Society of Madras.*

TREE TRUNKS AS FILTERS.—"A well-known Austrian engineer, M. Pfister," says the *Railway Review*, "is stated to have discovered a remarkable property of the trunks of trees, namely, that of retaining the salt of sea-water that has filtered through the trunk in the direction of the fibres. He has consequently constructed an apparatus designed to utilise this property in obtaining potable water for the use of ships' crews. This apparatus consists of a pump, which sucks up the sea-water into a reservoir and then forces it into the filter formed by the tree trunk. As soon as the pressure reaches 1·5 to 2·5 atmospheres the water is seen—at the end of from one to three minutes, according to the kind of wood used—to make its exit from the other extremity of the trunk, at first in drops and then in fine streams, the water thus filtered being potable, freed, in fact, from every particle of the usual saline taste which is such a drawback to water obtainable by ordinary manner.—*Public Opinion.*

THE "INDIAN FORESTER."—June 1895 has for contents:—Original Articles and Translations.—A Tour in the Landes and visit to the French resin works, by E. McA. Moir. Note on the Regulation of Forest Concessions in Oudh, by 'O.C.' The quality of quickly grown Teak-wood, by P.M. Lushington. Correspondence.—The Legal Position of Forest Rights, letter from 'B.H.B.P.' Seeding of the Thorny Bamboo, letter from T.F. Bourdillon. Official Papers and Intelligence.—The Resolution on Forest Policy: Circular letter of the Inspector General of Forests. Reviews.—Forest Administration Reports for 1893-94 for Ajmere and the Forest Surveys. Report on the Nagpur Experimental Farm for 1893-94. Forest Administration in Southern Australia, 1893-94. Shikar and Travel. Elephant Catching Operations—The Sad Sequel. Elephant Catching, letter from H B Bryant. Extracts, Notes and Queries.—Obituary—H H Davis and G A Richardson, Death of a Cape Forest Officer, Walking Sticks and Umbrella Handles from New South Wales, by J H Maiden, Consumption of Timber in the British Isles, by W R Fisher. The Whittall Memorial. Timber and Produce Trade.

THE COST OF AN INDICATED HORSE-POWER.—An interesting paper under this title was submitted at the recent Montreal meeting of the American Society of Mechanical Engineers by DeCourcy May, who summarised his subject in the following table, showing the total cost of 1 I.H.-P. per annum for various engines:—

Kind of Engine.	365 days of 24 hours. Coal per 2,240 lb.				308 days of 10½ hours. Coal per 2,240 lb.			
	$ 2	$ 3	$ 4	$ 5	$ 2	$ 3	$ 4	$ 5
Triple-expansion, pumping, Allis, 20 revs.	48	55	61	67	31	33	35	37
Triple-expension, without pumps, Allis, 50 revs. ..	27	33	39	45	16	18	20	22
Compound mill, best engine	29	36	44	51	17	19	21	24
Compound mill average	39	46	52	28	22	25	28	30
Compound electric light average ..	122	139	159	174	78	84	90	96
Compound trolley..	48	58	68	79	29	32	36	39
Triple-expansion trollery	45	51	64	74	26	29	33	36
Condensing mill ..	45	52	61	69	25	24	33	38
Non-condensing, 50 to 200 horse-power..	70	76	81	88	49	53	57	60

The figures for engines below 50 H.-P. vary so widely that they have been omitted. The above table has been calculated, says the New York *Electricity*, as far as possible from actual engines running under ordinary conditions, but it is not pretended that the figures represent true average values, the writer not having been able to collect information from a sufficient number of cases. The engines are nearly all high-class and of large powers; the figures in the table are therefore rather below than above the average.

COFFEE IN UVA AND DUMBARA.—This is evidently going to be a great year for what remains of coffee in Haputale and Madulsema, and even the natives are beginning to look after their old trees. A traveller the other day from Lower Maturatta via Dumbara to Kandy, found the Sinhalese busy clearing out and manuring their coffee trees and full of the belief that all the troubles of coffee were now over, and that an era of prosperity was to set in !

WEST HAPUTALE, August 2nd.—Tea doing very well up here, one or two of the older places giving as much as 600 lb. an acre, though high up. A big clearing has just been burnt off on Meeriatenne, belonging to Mr. G. Anderson, and of which his son is in charge. There is a small clearing on Yellatenne, and there will be more land opened on Callander next year. The road through the Valley to Ohia is nearly completed, there only being a few more stones to blast, and rice and tea find their way to the railway along it. The four miles have been constructed for less than the planters' estimate, which was so much under Mr. Harvey's estimate.

CEYLON PLANTERS BOUND FOR THE FAR EAST.—Mr. E. Walker, of Galloway Knowe, Nilambe is in Colombo at present, and will leave for Singapore by the French steamer on Thursday; his object being to go on to Borneo, to a place to which he has been recommended by Mr. W. D. Gibbon, Mr. Walker intending to plant coffee there if he likes the look of the land after inspecting it. If he decides to invest he will remain in Borneo, but if he does not like the prospect he will probably go on *via* Japan and America to England, in which case he will return to Ceylon later. In any case he hopes to get some good shooting in Borneo. His place on Galloway Knowe has been taken by Mr. C. C. Herbert, of Badulla, who has been working under Mr. Alison. Another Ceylon planter bound for the Far East is Mr. W. Greig, who will arrive in Colombo tonight or tomorrow. Mr. Greig has for long worked on Beaumont, Pussellawa, but that estate has lately been taken over by a Limited Liability Company, and he is going to Selangor to plant coffee. He will leave by the same steamer that takes Mr. Walker. Mr. Picken goes to Beaumont to join his brother, the superintendent, in the working of the estate.

PROGRESS IN NYASSALAND.—The British Consul (Mr. Sharpe) who had just reached England has been giving information, reproduced in the London *Times* of July 20th, respecting the general prospects of Nyassaland, as follows:—

"The coffee crop this year is fully double that of last year, and last year's was double that of the previous 12 months. From present indications the 1896 crop will be double that of this year, so it is evident that enormous strides are being made. Although the industry is only in its infancy, this year's crop will be over 200 tons. The revenue is steadily increasing, and the returns up to April were considerably in excess of those of 1894. British Central Africa, with the Shiré Highlands, is as yet the solitary instance of a successful agricultural colony within tropical Africa. The work has not been done by borrowed capital; it is genuine and sound business, nearly all done by Scotchmen with their own small capital, who are now getting good returns. A great point about the country is its cheap labour, so that in the future it will be able to compete with any coffee-producing country. Another point is the comparative cheapness of transport, which must speedily become cheaper. A railway is badly wanted from the head of navigation on the Shiré to Blantyre, the centre of the coffee district, a distance of 60 miles." The protectorate itself as it stands is about as large as Great Britain, and it will be a very long time before anything like the whole of it can be opened up. In conclusion, Mr. Sharpe said:—"An attempt is being made to see if it is not possible to tame the zebra and make him of use for purposes of transport. If this can be done tho tsetse fly will cease to be a terror so far as beasts of burden are concerned."

ELEPHANTS TO THE RESCUE.—Not alone in Madulsima and Hewa Eliya are elephants desiderated as transport aids by tea planters. We hear that there is room also for them in the Kelani Valley and we may shortly have an experiment of the kind on a Valley estate. A docile working elephant to drag in firewood, carry tea-boxes down and bags of rice up, might be a very useful adjunct to a big Tea Factory.

THE ORIENTAL ESTATES CO.—This is one of the few Companies connected with Ceylon planting, whose shareholders cannot be congratulated. There is no dividend to declare, although there is an appreciable balance on the right side to carry on, in the Report we print elsewhere. But then Ceylon is not at all to blame—the fault is all with Mauritius, as the following figures shew:—

Ceylon: Income..	..	£56,827
,, Expenditure	..	39,388
Profit ..	..	£17,439
Mauritius: Income	..	£51,732
,, Expenditure	..	52,753
Deficit	..	£ 1,021

OUR TEA SHIPMENTS up to the end of July are in excess of those to the same date of last year by over 9 million lb. Even if this excess were not increased during the remaining five months, our total shipments for 1895 would be 93½ million lb. or 3½ million in excess of the official estimate. Past experience shows that about 55 per cent of the year's crop is shipped in the first six months and 45 per cent in the latter half. This year gave a total of 51,667,716 lb. up to 30th June and applying the proportion, we would get 42,273,651 lb. from July to December or a total of 93,941,447 lb. which is very close on our previous estimate. The lesson would seem to be that between this date and the end of the year Ceylon is not likely to ship—at any rate to the United Kingdom—much (if any) more tea than she did during the same period of last year.

HOW BRITISH CENTRAL AS WELL AS East Africa—is to be opened by railway and steamers is well shown in the latest *Contemporary*. If the following plan is adopted, it will be a good thing for the Nyassaland planters:—

The *Contemporary* contains a plea by Mr. G. F. Scott Elliot for making our route into Uganda not a Mombassa railway, but a highway, half to railways and half of rivers and lakes *via* Nyassaland. He would make the merchant and his bales on the way to Uganda, go first by steamer up the Zambesi and Shiré Rivers to the Shiré highlands. Thence, by a railway one hundred and twenty miles long to be constructed to Matope, from which point the upper Shiré is navigable, and goods can be carried to the north end of Lake Nyassa. Here another railway (two hundred and forty miles) would lead to Lake Tanganyika. Tanganyika gives a clear waterway of four hundred miles to its northern end. Then another railway to the Karega River, and finally, down the Karega River to the Victoria Nyanza. In favour of this route Mr. Scott Elliot urges two things. It would cost about half-a-million less than the Mombassa railway, and it would kill two birds with one stone,—that is, while opening up Uganda, it would also open up the already flourishing settlements of British Central Africa, and make a beginning of the Cape-to-Cairo route. The proposal is a fascinating one, and will no doubt be carried out some day; but whether it ought to be done instead of—not as well as—the Mombassa railway, we cannot profess to decide. That is a matter not for us, but for experts like Captain Lugard and Colonel Colville.

The Cacao Crop—now setting in the Matale and other districts is likely to be late through the effect of the prolonged drought. It is possible that the harvesting may not take place till January, so making a considerable difference in the exports of cacao for this year.

Coffee Cultivation at Port Dickson.—During June Mr. D. M. Lumsden arrived for the purpose of taking up his concession of 2,000 acres of land at the 11th mile on the railway for the purpose of cultivating coffee, and the survey has since been completed; clearings for three nurseries have been made and extensive felling of jungle is to be started in September next. Mr. Lumsden is expected to return in November from England.—*Pinang Gazette.*

Green Bug on Coffee and Lady Beetles.—We regret to learn from Mr. Bagot, whose letter appears elsewhere, that so far, Mr. Green's enterprise in indenting for the lady beetles—(said to be the special enemy of the bug insect on the orange trees and expected to do the same good service on coffee)—has not met with success. The beetles eh ordered, all arrived dead, through being put into pill-boxes without any air holes. We should have expected the State Board of Horticulture, California, to have understood better how to send such insects on a long voyage. We trust the next attempt may prove a full success, both for Mr. Green's sake and for that of our remaining holders of coffee upcountry.

Overproduction of Tea.—Mr. J. Berry White, Chairman of the Jokai Tea Company, had some caustic remarks about his neighbours in his address at the annual meeting of the Company:—

In our report we refer to this in the paragraph regarding the market price during the last year, which was, on the whole, very favourable. The firmness of the market was no doubt in a great measure due to the fact that the yield was several million pounds under what was expected. In the current season an increase of nearly 20,000,000 lb, is expected from India and Ceylon. This increase, I have no doubt, will be absorbed, but at the cost of a fall in the average sale price of all low and medium class teas. I do not expect the special teas of Darjeeling and of Upper Assam will be much affected, as they have particular qualities which cannot be produced elsewhere; so the loss will fall on what I regard as the chief sinners in causing over-production—the Indian districts of the Dooars and Sylhet and the Island of Ceylon. I have spoken in a somewhat pessimistic tone of the consequences of this over-production. I hope you will not misunderstand me: I have no fear whatever for the future of our properties. We have been looking forward to some crisis consequent upon over-production for some time past, and have been putting our house in order. We have now our properties so fully equipped with labour, machinery, buildings and transport that after this year our expenditure must be very much less, and, notwithstanding the heavy outlay on betterments, we have kept the capital cost per acre of our cultivation at about £40. I do not apprehend that there will be any reason for reducing our dividend in future years, unless the crisis, when it comes—if it ever does come—be of a much more severe and far-reaching character than there is any reason at present to expect.

Mr. Alex. Laurie of the Jhanzie Tea Association at the annual meeting, was more genial:—

Before making the proposal to adopt the report, let me impress on our shareholders the great advantage that would arise to the tea industry generally, if everyone interested in Indian and Ceylon tea would combine to promote an increased demand for these teas. If everyone would only help a little by writing to friends in America, Canada, and similar places, urging the advantages offered by the use of Indian and Ceylon teas, in preference to the weaker teas from China and Japan, the aggregate of good to the industry would be immense.

Kola Nut.—As of general interest to the cultivators of Kola, we readily give a place to the following information sent us by Mr. Philip, Kandy:—

"Our foreign agents write under date 25th June, 1895 as follows:—'You will have to be very careful to see that you do not plant or distribute what is known as 'Sweet Kola,' that is the seed that has four or five cotyledons and divisions in it, as it is most difficult to do anything with it. The seed is principally sold in powder to adulterate the ordinary 'Kola' (*sterculia acuminata*). Our Kola nut plants are of the true cultivated superior variety.'"

Advertising Ceylon Tea.—The Ceylon tea planting industry is regarded with great interest by London journals, who are always ready to extend a friendly lead to reports concerning it. It reflects great credit on all concerned in pushing the interests of Ceylon tea that the industry receives a remarkable amount of gratuitous advertising, and this has done a great deal towards popularising Ceylon tea with the British public, who like to have their attention continually directed to a really good thing. This is what an evening paper says: "Some idea of the extent of the Ceylon tea industry may be gathered from the fact that to produce last year's crop of exported tea no less than 340,000,000 lb. of green leaves were gathered from the plants, and conveyed for the most part on the backs of the pickers to the factories for manufacture. Last year there were about 305,000 acres of land in the island planted with the tea shrub, and there is every prospect of this acreage being doubled within another ten years."

The Indian Tea Association in London.—We direct attention to the able and comprehensive Report of the Committee of this body for the year 1894-95, as given on our fourth page today. "New Markets" is of course one of the most important subjects treated and in this "America" leads the way. The Committee is extremely hopeful of the prospect, due mainly to the good and persevering work of Mr. Blechynden with the comparatively small amount of funds at his command. We read:—"With "further energy, perseverance and the necessary "funds, the future of Indian tea in North "America is now assured;" but the Committee call on the planters for subscriptions, so as "to "press forward with vigour *for one year more* "*at least*, the work of advertising and introduc-"ing the tea to the American public." Now we consider this good news to be as important in the interests of Ceylon as in those of India; and indeed our Planters' Association might well pass a vote of thanks to Mr. Blechynden and his Committee for the valuable solid advance they have made against the common foe, during a period lost by Ceylon through prolonged discussion. In the report before us we have the proposal for "joint action" very clearly put and after reading the "conditions" we are almost as sorry as the Committee that it has fallen through. Two points of importance were that India had to contribute as much as Ceylon namely £2,500; while it also gave £500 for the Commissioner against £1,000 from Ceylon which was to have the selection. The scheme for working, so far as the heads in this Report go, seems quite a feasible one. But it is no use regretting what is beyond our reach now, and we can only hope Mr. Mackenzie will do his best in advertising, at Food Shows and by other means to accentuate and increase the advance already made.—There is a good deal more of useful information in the Report which indicates a great deal of work done on behalf not simply of Indian, but of British grown teas.

VARYING CLIMATES AND EXPERIENCES.

Life in the Tropics—as we are daily reminded—is not without its drawbacks. Some are even disposed to think that our own favoured isle of Ceylon has more than her fair share of discomforts. Yet those who take the trouble to compare the conditions of other climes, find that the worries and sufferings—like the blessings—are upon the whole pretty equally divided:—

"As different good by Art or Nature given
To different nations makes their blessings even."

Few who experienced and survived the last winter in Britain will live long enough to forget the severity of the frost during January and February of this year, and now from the Antipodes we have accounts of a similarly abnormal wave of icy cold in July, the height of winter of course there. Private letters speak of the thermometer approaching Zero, with burst water-pipes in the inland towns of New South Wales; while daily skating on the upper roaches of the Lachlan adds a new experience doubtless much enjoyed by the young "Cornstalks." But what about the orchards? There's poor Towser who left his native Devon 30 years ago to devote his life almost single-handed to the formation of an Orangery. What a sad disaster this bitter frost must be to him!—apples, pears and grapes are of course safe; but alas for those delicious oranges which promised such a rich reward! I might have imagined the thermometer of my friend being a little out—like the Irishman's which "did not affect the temperature"; but here comes a cutting from the *Sydney Morning Herald* of the 11th July:—

The Cold Weather.—At 6 o'clock yesterday morning the lowest reading at the Observatory within the 24 hours was reached, namely, 29·2 on the grass, or over 4½ degrees higher than on Tuesday morning. Some of the inland temperatures were, however, startling in their frigidity. At Kiandra the mercury fell to 10 deg. below zero, 42 degrees of frost. Kiandra, holding the most elevated position in the colony, is always sure to be returned at the head of the poll, under the circumstances. Yesterday afternoon a block of ice 2½in. thick was brought into Parramatta from Castle Hill. It was taken out of a pond in one of the orchards. In the morning the ice in this pond was over 3in. thick.

Imagine the effect of 2½ inches ice at Parramatta.

The great drawback to the Australian climate is not however the danger from extreme cold, but the extreme variableness of the temperature. It is this that kills off the poor Anglo-Indian who goes in search of a perfect climate, tortures the squatter's wife with neuralgia and himself with rheumatism. A daily variation of 40° to 50° Fahrenheit is quite common. More safe is the old country with all its severity.

Here in Ceylon we do not boast of a perfect climate, but we at least run no risks from frost, while the range of temperature at medium altitudes is marvellously little. In the bungalow in which I reside, situated at 2,000 feet above sea level, the thermometer has just varied 3° viz., from 74° to 77° within the past month. Warmer than necessary certainly, but quite compatible with perfect health. As a proof of this I lately came across two European ladies who for 30 years have not been off the estate for a single night and never a day ill! After this, who will dare to disparage the climate of Hantane,

But apart from the climate, Australia has many disadvantages from which we are spared in this comparatively free country. The iniquitous system of Protection still prevailing there, the hateful jealousy of neighbours, the unutterable selfishness of the "squatocrat" are fast completing the ruin of those disjointed colonies; and it is much to be feared that, until the Japs or Chinese seriously threaten an invasion, no united action for any good or useful purpose is possible there. I take the following cutting from the *Sydney Mail* of 13th ult. to show the absurd length to which protection can be carried even in the most enlightened and liberally disposed of those ridiculously over-governed colonies:—

Under date 3rd June, 1895, Mr. William Hicks writes from South Apsley, Cow Flat P.O., N. S. W.,—"Having met with a severe accident at George's Plains in March 1894, by which I lost a leg, I am importing an artificial leg from America. On arrival of the limb in Sydney I am informed that I must pay a duty of £2 5s 10d on the same. Now I think that is very unjust. Before ordering the leg I did not take the trouble to find out if a duty was to be paid, never dreaming for a moment that a cripple would have to pay duty on an artificial limb in any part of the British Empire, and I was very much surprised to find that such is the case. The Government might as well charge a passenger with an artificial leg, or crutches, a duty before allowing him to walk ashore, even if the same was attached to his body. Will you please bring the case before the proper authority, with the object of obtaining a refund of the duty, and notify me if such can be obtained? I would not ask you to do this for me only I think that the omission of artificial limbs from the free list is an error, owing, no doubt, to the rarity of such imports, and that the duty is very severe on a man in my position." As previously stated, no redress could be given.

Now our Government may be urgently in need of much improvement. We have the indefensible one-sided tax on rice, and the contemptible tax on light still staring us in the face; but we have not come to anything so asinine as a tax on wooden legs which a whole Legislative Council could not repeal! One would imagine that there the all-powerful working man had these matters very much in his own hand, but it must be confessed that the Australian labourist is politically the very prince of idiots.—*Old Colonist.*

The present mail brings us worse news still from New Zealand in regard to weather. Fancy 200,000 sheep perishing in one county! The following extract, is sent us from Dunedin by an old Ceylon resident:—

CHRISTCHURCH, July 10.

Snow commenced to fall in the city about 8 o'clock this morning, and a couple of hours later was lying on the ground to the depth of three inches. In the northern districts the fall is heavier. The farmers are having an anxious time in removing stock to sheltered spots. The snowstorm this morning was the heaviest in the district for years. It thawed very little during the day, and there is a very sharp frost tonight. It is feared there will be a great loss of sheep in the back country.

News from country districts states that the fall of snow this morning has been very heavy. The mortality among sheep within the district will be very heavy, and it is stated that 80 per cent of those got are very weak, and have been subsisting by eating the wool off the dead ones.

The loss of stock in the Mackenzie country is expected to prove serious. The rabbits are said to be dying in numbers, and are so tame that they will allow themselves to be handled. They can be seen in scores in the sheep camps, disputing the sheep's right to a solitary tussock brought to view by the continual movement of the sheep. The latter are so weak that they can hardly walk out of the camp when tracks are made for them. The winter has been worse than any previous one because the snowstorms have been so continuous, without a thaw to form a crust on which the sheep can walk. It is estimated on good authority (says the *Oamaru Mail*) that 200,000 sheep have perished in the Waitaki County during the late severe weather.

THE HYDROSCOPIC PROPERTIES OF TEA.

A gentleman with a scientific training writes us:—I have received by this mail a brief note regarding tea from a friend who is working in conjunction with me in my researches. I mentioned some time ago, what, my customers said regarding tea sent home in bulk and packet. That the bulk tea was as different from the packet tea, "as night from day." The flavour being quite different. I instructed my friend to try and find, what the loss of flavour was due to in the bulk tea which was retailed out, in paper packets. In his letter he says that he opened a lead packet and exposed it to the action of the air, the tea was carefully weighed exactly 452 grammes. It was laid aside for 56 hours and then weighed was found to weigh 455·792 grammes, and at the end of three days, that is 72 hours, it was again weighed and the increase was found to be 5·42 grammes, that is the tea weighed 457·42 after exposing it for 72 hours to the action of the atmosphere; or to be better understood by those who are not used as yet to the metric system, the weight increased by nearly 1½ drams, 452 grammes being equal to one lb. almost. This increased weight was soon lost by placing the tea in a mattress containing Calcium Chloride, and heating it to 100° F. This proves that the increase was due to the absorption of moisture from the atmosphere. I hope to hear more from him regarding his further experiments. I think the above ought

to be sufficient to make the planters pay some attention to Mr. T. Christy's letter appearing in the columns of the *Observer* of the 19th ult. Mr. Christy does not need to apologise for the advice given as it is of the utmost importance, to exclude the atmosphere from Ceylon tea owing to their Hydroscopic properties.

EARLY DAYS ON THE AGRAS.

(*From a Correspondent.*)

I began on Sutton in the Agras in 1871 and '72, and subsequently on Clydesdale and Ardlaw in '74, all in coffee. Perhaps some of the present-day planters of that district could scarcely picture to themselves the rough life led by the pioneers in those districts ¼-of-a-century ago. How when hunting Elk we came upon Glasgow estate then in the middle of jungle, and where we killed a Sambur while swimming or wading across the stream. And many a hunt we had on Holmwood (then not opened) bordering the Bopats; when the meet of the Dimbula Hounds with Wiggin, Tom Brabazon, young Renny, Pilkington, MacCall and the Grays often hunted on the plains—separately with packs; when the melted glass of the burnt down Duke's Hut, could be found on the Patnas, near Fisher's Pool; and when Atherton's bungalow near Land's End was standing, and now only a chimney marks the spot as you say.

INDIAN PATENTS.

Calcutta, the 25th July, 1895.

Applications in respect of the undermentioned inventions have been filed, during the week ending 20th July 1895, under the provisions of Act V of 1888.—

For an improved device for Weeding Nurseries or Plantations—230 of 1895.—William Hose, of Roydon Rectory, Diss, in the County of Norfolk, England, Planter for an improved device for weeding nurseries or plantaions.

Whereas the inventors of the undermentioned inventions have respectively failed to pay the fees within the time limited in that behalf, it is hereby notified that the exclusive privilege of making selling and using the said inventions in British India, and of authorising others so to do, has ceased :—

For improvements in machinery or Apparatus for Rolling or curling Tea Leaf.—142 of 1888.—Mr. H. Thompson's invention for improvements in machinery or apparatus for rolling or curling tea leaf. (Specification filed, 17th April 1889.)—*Indian Engineer.*

COFFEE-GROWING IN PERU.

In a consular report on the trade and commerce of Callao, Mr. G. W. Wilson has embodied a pamphlet in regard to the coffee-growing districts of Peru, printed in lima last July. The writer of this says:—Peru has been known for many years as a coffee-producing country, but the coffee grown on the coast has been absorbed by domestic consumption, and Peru's appearance as an exporter of coffee is of recent date, although she is now likely to be a considerable competitor with other countries. Coffee-planting began and coffee is still cultivated with success near the port of Pacasmayo. But although the cultivation on the coast could be somewhat extended, it must always remain restricted, as there are only certain favoured localities in which the planter can hope for a good return. The region which Peru offers to the coffee planter, unsurpassed in fertility, and almost unlimited in extent, is situated on the eastern slopes of the Andes, among the network of streams and rivulets that find their way into the great affluents of the Amazon. This region, known as the *montana* has hitherto been shut off from the world by lack of communications, and above all by the difficulty of crossing the high ridge of the Cordillera that bars it from the coast. In spite of these difficulties, coffee has been cultivated both in the south in the gold-bearing districts of Sandia and Carabaya, and in the centre of Peru in the valleys of Chanchamayo, Vitoc, and Huanuco. It is the Chanchamayo district—for most of the coffee that passes under the names of Vitoc or Huanuco comes from Chanchamayo—which is the real coffee-planting district of Peru, and it is the production of this region that has elevated Peru to the rank of a coffee-exporting country. This is due to the completion of the central or Oroya railby the Peruvian Corporation to its present terminus at Oroya. . . . . The output of coffee from the whole region was about 1,500 tons in 1893, but extensive planting has lately taken place, and production will shortly be trebled.

It is considered that coffee can be raised at the expense of 5 Peruvian soles per quintal, or 100 lb., the yield of a tree after the third year being about 3 lb. Clearing ground is easy, the hill-sides being covered with dense but light timber, easily felled and burned. The average cost of clearing may be taken at 65 soles (6*l* 10s) a hectare, or 26 soles (2*l* 12s) per acre. The number of plants that can be introduced with advantage on a hectare is about 1,700 to 1,800, or say 700 to the acre, although a larger number are often put into the ground. Young plants can be obtained for 5 soles (10s) per 1,000.

Coffee is usually bought at the planter's door by Italian houses in Tarma at prices varying from 18 soles (1*l* 16s) to 30 soles (3*l*), and the cost of transport of a quintal from Chanchamayo or from the Perené to the port of Callao by mule and railway is from 4 to 5 soles per quintal. Recent lots have been sold in New York at 22c (gold) per lb., a price which is equal to that of the best Mexican or Central American with the exception of one or two favoured qualities, and will improve when the coffee is better cleaned for the market. Freight to New York from Callao by the Merchant's Line is 3*l* per ton, while the British Royal Mail Company have recently put down their rates from 5*l* to 4*l*, in expectation of increased production.

The principal difficulty of cultivation in the Peruvian *montana* lies in the broken character of the ground. This in itself is favourable to coffee cultivation, as the hill-sides afford slopes where the young plants can be raised without being exposed to the sun all day long, and the expense of protecting the young plants by artificial shade is avoided. . . . . Besides coffee, cocoa, tobacco, indigo, rice, sugar-cane, maize, &c., can be grown on the Perené, while wild vanilla is found in the forest, and could be brought under domestic culture. An experimental plantation of tea is also being made. —*Grocer*, June 22.

FASHION IN TIMBER.

For many years there has been a falling-off in the demand for many varieties of ornamental timber such as were at one time generally used by cabinet-makers in England. The effect of this has been especially noticeable in the periodical circulars issued by the large timber-broking firms, such as Messrs. Churchill and Sime and others. Our own local sales are also evidence of this fact. Not very long ago, ebony offered for sale here failed to obtain anything like satisfactory bidding. A correspondent remarking upon the failure, observes that there must be some reason for this falling-off. He finds this, he tells us, in the unsatisfactory character of the work now done in hard woods generally. He says that he recently imported some of the antique ebony furniture offered for sale at the London curio auctions. In his opinion there was no comparison to be drawn between the work in such wood of a century or two back and the modern exemplars of it to be obtained from the London cabinet-makers, even of those of the highest standing. It is rather difficult to decide why this should

be the case; but the explanation is probably to be found in the disinclination of buyers of the present time to pay the prices of a byegone age. In ebony furniture more than one century old, one can find none of that loosening and gaping of joints that is said to characterize the work of modern manufacturers. Why this contrast should be observable, it is difficult to account for, save under the supposition that the present rage for cheapness renders it impossible for the careful work to be done that is noticeable in the masterpieces of some of the older cabinet-making celebrities. As the result we learn that ebony and many of the ornamental timbers are going out of fashion at home. The beautiful carved work of Bombay is for the same reason largely ignored, while for cabinet work of two centuries back almost fabulous prices are still given. It cannot be denied that the tools fitted for working in these hard woods have greatly improved in quality, and are at the same time much lower in price than they were when these antique specimens, so eagerly sought after, were made.

A safe conclusion is, therefore, that the reason for the change in fashion which tells so seriously upon the prices obtained for many of our hard ornamental woods is more due to inferior workmanship than to any other cause. Improvements in mechanical working fail to compensate for that laborious and loving work that characterized the furniture of a century or so back. Even the best machinemade watches fail to compete with the handwork of some sixty or seventy years ago. One critic says he has in use a chronometer worn by himself and his father before him for over sixty years. It never varies from its regulated speed, and from year's end to year's end it never requires alteration. No modern machine-made watch, however costly, gives such results. Analogous reasons, it is believed, are the cause for modern hard wood ornamental furniture failing to find its former demand. Ebony, owing to the peculiarity of its grain, cannot be satisfactorily fashioned by any mechanical process. Each separate piece requires to be dealt with separately and intelligently. The art af doing this does not remain among even the most skilled workmen of this age. In this fact, is found the reason why of late years there has been a marked falling-off in the demand for furniture made of this class of woods, and for the failure to obtain prices for ebony, satinwood, &c., equivalent to those of even a quarter of a century back. Under all the conditions of our time, we fear the demand can scarcely be likely to rise again to its former level.

ORIENTAL ESTATES COMPANY:

THE CAUSES WHICH HAVE AFFECTED THE COMPANY'S REVENUE—THE OUTLOOK FOR SUGAR.

The ninth annual ordinary general meeting of the Oriental Estates Company, Limited, was held yesterday, at Winchester House, Old Broad-street, E.C., under the chairmanship of Mr. Quintin Hogg.

The Secretary (Mr. Henry Greey) having read the notice convening the meeting.

The Chairman said: In moving the adoption of the report and accounts, I should like to give you a sketch of what has been going on both in Ceylon and in Mauritius, the good we have met with and the evil that we have had to contend against, and the results of our stewardship. Let me begin with Ceylon. The weather there, though not very adverse, has not been very favourable, and the result has been a slight diminution in the outturn of the estates, which however, is not of importance. It amounts to about 40,000lb in the production of tea but that has been met by a more than corresponding economy in the cost of production. This cost is, I think a fraction below that on other large blocks situate somewhat the same as ours. The price, which in July last year had fallen to a very low ebb indeed gradually rose until it showed an advance of nearly 2d per lb. This year there has been a gradual decline again until we have nearly reached the figure ruling last July. One element in the low prices last July was the heavy stock with which we commenced the year, and the price obtained for tea to-day is by no means helped by the rumours which come to hand from more than one quarter of very considerable extension in India of tea plantations. It seems that we can take here something like 120,000,000lb of Indian tea 80,000,000lb, of Ceylon and 40,000,000lb. of China. If there should be a fall in price, it is not unreasonable to expect that some of the lower qualities of China tea may fail to come here, and they may be further supplanted by the lower qualities of Indian and Ceylon. It is difficult to foretell what may occur; but there seem to be reasonable grounds for that hope. Those of you who have for some time followed the conditions of our Ceylon estates have noticed that there has been a considerable amount of land under cultivation which has not yet come into bearing. The policy of the board before I joined it, which was recommended by Mr. Rutherford and approved by you here, was to extend and get into cultivation all the land fit for that purpose that you possessed. There are about 1,200 acres which are opened and under cultivation, and which give us no return. When these areas come into bearing, our general cost of tea will be reduced. Then, again, we have had not infrequently during the past to erect a factory at an expense of several thousand pounds, and although, as we carry on such a large business, we may expect in the future to have some small items of machinery and extension to provide for; yet we hope we shall not have to erect a new factory or to spend so much as during the last few months. The lines laid down by Mr. Rutherford have been satisfactory to the board, and have worked out very well; I hope they meet with your approval also by their results.

Now let me turn to the Mauritius potion. I stand before you somewhat envious, because it is much more hopeful to grow sugar in a silver country than in a gold country. What Mauritius would be with a gold standard I cannot think; but by paying your wages in silver thero you have a much better chance of weathering the storm than in the bulk of English colonies, where paying wages in gold means paying almost double. For many estates last yoar, with its extraordinarily low prices and most disastrous fall, is the worst I have known in my business career. I had only one estate that did not lose considerably. On your estates you lost a comparatively small sum. I suppose thore are few sugar-cane estates, with the exception of those silver countries and with virgin soil and special reasons for cheap production, which can show anything like an even balance-sheet this year. The great fall occurred in 1884, and we have had nothing approaching it since, but in 1894 we had a fall below the lowest point yet reached, both beet and cane going lower than ever before in the history of sugar. Though this was a serious matter, and involved a loss of £4 a ton on low-priced sugars and of £3 a ton on the better classes, the trouble was aggravated by two other minor matters, which we should not, however, under ordinary circumstances, have looked upon as being minor ones. I refer to the weather, which in Mauritius was not at all favourable, and also to the cane disease. At the last meeting I told you there was a slight loss from cane diseaso. No provision had been made for it in the previous estimates, as our manager did not think it would amount to anything very serious; but last year in estimating for the crop about which we are talking today he did allow on one estate. It is not one of the company's estates, though you practically control it. The allowance made was 500,000 lb. out of 5,000,000 lb., which we thought was not unreasonable; but the misfortune was that it was only one-third of what ought to have been allowed

the loss amounting to 1,500,000 lb. That loss, together with the low prices, instead of making that estate the head of the list for production and profits, put it very low down in the list indeed. The disease did not affect the other estates to anything like the same extent, and so, though the quality of the cane was not so good, we have no great reason to complain of the disease. At Britannia the sugar in the cane, instead of averaging a trifle over 13 per cent., averaged only a little over 11 per cent.

The three adverse factors, therefore, have been the low prices, the disease, and the weather. The weather is not a serious item. It has diminished our output, but to nothing like the same extent as the disease. We have had, very unwillingly, slightly to increase our holding in Mauritius; but there was an estate which was being partitioned right in the heart of one of our properties, and which we took up owing to the need of giving a certain amount of land rest at Britannia. You have in your employ Mr. Nash, our head attorney, and Mr. Byrd, who take a very intelligent interest in the cultivation of sugar, and who are very well up to date in their operations. They have been resting the land largely, and giving it nitrogen by growing green crops and ploughing them in. Not only have they been able to give the necessary nitrogen in a better form than by the application of manure, but the manager tells me there is the greatest possible difference in the appearance of the canes which have been under these green crops and those which have not been so treated. To enable us to put the land thrown out under these green crops 300 acres were bought near the Britannia property. The directors did not want to buy the land but Mr. Nash recommended them to do so, and, believing it was in the interests of the company, the purchase was sanctioned. The opinion of the board is that we ought not to increase in Mauritius if we can avoid it. I am glad I did not prophesy last year as to the future of the sugar estates, for I should not have prophesied a fall of £4 a ton, and that fall would have nullified any remarks I should have had to make. We have now all we can do to weather the storm. We have sent out the most stringent instructions about the limitation of expenditure, we have been through the estates and found out the lowest point at which they could have produced in favourable years, and we have given a definite limit which will prevent your losing money at these prices. I do not think they can continue, and for this reason: Other people are losing very much more heavily than we are and it, is quite clear that the present price of sugar is below the cost of production on the Continent, and also below the cost of production in most parts of Cuba. Of course, I must except a few places with special advantages; but in the long run I look for some increase in the price of sugar. We must not lose sight of the disturbances in Cuba. Some men were expecting 1,000,000 lb. from the island; they are now talking of 600,000 lb. or 700,000 lb. I believe both figures are extreme; for the production could hardly have reached 1,000,000 lb., and it would not be as low as 600,000 lb. Apparently, the insurgents are insisting on the managers not cultivating their estates. You will have noticed something in the *Times* about it. The insurgent leaders have been saying that the Spanish officals will stay in the island as long as there is a revenue, and the only way to send them back is to stop the revenue—that is, the cultivation—and these declarations may have a certain amount of effect. The insurrection is not confined to any particular spot, but the insurgent leaders have gone on the principle of scattering their forces all over the country, and harrying those who do not agree with them. Some sugar estates are escaping this by paying a subvention to the insurgents; but all will not do that, and perhaps some, after they have done it, will still be harried. The result in Cuba must tend, at any rate, to have some beneficial effect upon the price of sugar in the market. I will now formally move the adoption of the report and balance-sheet which are in your hands.

Mr. Alex. W. Crichton seconded the resolution, and, in doing so, attributed the non-declaration of a dividend entirely to the climatic and other circumstances which had existed in Mauritius.

In reply to questions,

The Chairman said that £45,000 represented mainly controlling interests in certain Mauritius estates which were not acquired by the present board, but which were part of its inheritance. The directors were working them to the best of their ability. With regard to dividends, the directors deemed it unwise to distribute anything at the present time, as it was necessary for the company to have a certain amount of working capital. Borrowing at high rates was often ruinous, and the sugar business was very risky. The reserve was on deposit at the bank.

The report was adopted.

On the motion of the Chairman, seconded by Mr. Rutherford, Mr. Norman W. Grieve was re-elected a director.

Messrs. Welton, Jones & Co. were re-appointed auditors, and a further resolution was passed to request them in future to add to the certificate the following words, or words to a like effect—viz, that "the balance-sheet is a full and fair balance-sheet, and correctly exhibits the true position of the company."

Mr. C. J. Thomas proposed a vote of thanks to the chairman and directors, which was seconded by Mr. C. Bishop, and passed unanimously.—*Financial News*, July 26.

CHINA TEA EXPORTS AND CONFUSING STATISTICS.

The experienced journalist who is good enough to send us the special telegrams of Tea Shipments from the Far East to the United Kingdom, writes under date, Hongkong, July 25:—

"Of course you understand that these telegrams only cover the shipments to Great Britain. There is now a good deal which goes direct to the Continent, beside what goes to Odessa, which alone takes more than Great Britain does now that you, by putting tea into the mouths of the people there, have taken the bread out of the mouths of your unfortunate brethren in China.

"Statistics are becoming increasingly difficult to get; merchants go by the season; the Customs by the year; some returns are in chests and half-chests, some in lb., and what is worse the Chambers of Commerce of the different ports won't work together and the merchants even won't work with their own Chambers. Not even the Customs figures when they come to be made up are correct, for they do not include what comes to Hongkong by junk from Kwangtung and Kwangsi for shipment here. I wish Japan had been allowed and induced to take over the whole of China and 'run' it in the intelligent and enterprising way they do things in their own country."

THE AGRICULTURAL MAGAZINE.

The following are the contents of the August number:—Dairying, Occasional Notes, Rainfall taken at the School of Agriculture during July, Laws of Ceylon Relating to Agriculture, Bazaar Drugs in Veterinary Practice, Lady Birds, The Value of Kainit, An Important Letter about Rhea, Contagious Diseases of Insects, Dairy Pickings, Camphor, Common Mortar, Rhea (Ramie) and China Grass—a Distinction, and General Items. The two articles on lady birds and contagious diseases of insects are specially interesting, as dealing with a subject which is prominently before the planting community at present, viz., the taking advantage of natural means of destroying insect enemies. The article on kainit serves to show that potash is a far more important ingredient of manures than it is generally considered to be. We are glad to find that there is a demand on the part of private land-owners for the animals bred in the Government dairy farm.

SALES OF CROWN LANDS.

We direct the attention of the Government—since the Durbar has already closed—to the letter of a practical planter on this subject in another column. It shows how great is the amount of red tape which clogs the way of business in the direction referred to, and how very discouraging is the present attitude of, at least some, Government Agents and the officers whom they influence, in respect of applications for land. Never were the doings of an obstructive circumlocution office more fairly delineated, or the unwise action of the Government Agent for the Western Province more explicitly condemned. But the point is whether such action may not be the outcome of the deliberate, though undeclared, policy of the Government? It has apparently taken credit in some quarters for laying an embargo on local land sales, the result being as our correspondent point out, to drive a great deal of capital out of the island, and some of our best and most experienced colonists to exploit new planting enterprises in Java, Sumatra, the Malayan Peninsula, and Central Africa. We have no fault to find with such new enterprise; but certainly from the point of view of the people and taxpayers of Ceylon—whose interests (and not those of any one limited class) should be guarded and promoted by Government,—the movement is a dubious one. In supposing that their do-nothing policy checks local "over-production," our Government forgets how entirely relative is this term. Limit Ceylon to 90 to 100 million lb. of tea exports and what benefit will there be, when Travancore, the Dooars, and high districts in Java send forth the extra millions of lb. which might just as well have been turned out in Ceylon? There will be the same markets to go to and the same competition to meet. But how great the difference, as our correspondent shows, to the wage-earning classes in Ceylon is the fact that the extra production occurs outside, instead of inside the Colony! And very soon too, the General Revenue must suffer from this do-nothing policy—a policy which in being extended to minor applications for blocks of land, as additions to existing plantations, becomes at once specially worrying as well as ridiculously obstructive.

VINE-GROWING IN CEYLON.

An interesting experiment has just been commenced in the neighbourhood of the Agricultural School in Viticulture. M. Zanetti, an Italian, with some previous experience of this Colony has brought a consignment of young vine plants and cuttings from Australia. These have been put out on a piece of land allotted by the Principal of the School to the following extent:—800 plants, 2 years old and younger, down and growing, and nearly 1,000 cuttings. M. Zanetti wanted land and help *at once*, as the plants had been over a month out of the soil and could not have been kept much longer, so Mr. Drieberg came to his rescue. He says that his experience is that there is no objection to any amount of moisture, provided the soil is open and naturally well drained. He, however, means to give trials in other places as well. This is all very interesting; but we have always regarded the Jaffna peninsula, Puttalam, Chilaw and Hambantota as peculiarly the districts in Ceylon suited to the vine. Bennett in his "Ceylon and its Capabilities" reported that his garden in the Magampattu (Hambantota district) produced very fine grapes from vines introduced by him from Teneriffe in 1821. He used bones as manure, and got bunches double the size of those got from unmanured vines. In writing to a contemporary M. Zanetti says:—

Though not altogether so easily as in other tropics and soils, I am of the firm opinion, that vine growing in Ceylon, could be effected as a paying enterprize. The difficulties, presented by the rainfall and the want of certain chemical properties in the soil, could be surmounted; the first, by selecting only such soil as would be most permeable and most likely to keep its surface free from collected water and easily dried, such as sandy or very light gravel soil; the second, by using those fertilizers only, whose chemical qualities added to those of the soil, would furnish the plant the necessary nourishment, wanted to produce the delicious fruit and bring it to its full maturity, which, I believe has not yet been done, neither in Jaffna, nor by the amateur growers in the island.

It is well to remember that experiments with imported vines have not been unknown in the present generation. Capt. Bayley some years ago did much in this way, at Galle, in the Morowa Korale and other localities; but without such success as would warrant perseverance.

THE DOOMO TEA ESTATES COMPANY.

"The Doomo Estates Company" is (as already mentioned) to comprise the Verelepatena Estate purchased from Mr. Channing Esdaile for about £14,000 and the Doomo estate bought from Mr. Mason for about £7,000—or R250,236 and R127,600 respectively. The total area of both properties is 983 acres of which 560 are in tea, 120 coffee. Mr. Mason is likely to be Manager on Verelepatena.

CLUNES ESTATES COMPANY.

The annual general meeting of the Clunes Estates Company of Ceylon Ltd. was held in the registered office of the Company No. 18, Upper Chatham Street on the 16th August. The Chairman, Mr. Donald Cameron, presided, and there were also present Captain Sandeman, Messrs. W. R. Tatham, James Forbes, George Vanderspar, John Guthrie, V. A. Julius, W. Forsyth and Gordon Frazer, secretary.

The notice calling the meeting having been read and minutes having been approved

The Chairman said that the report of the Directors had been in the hands of the shareholders for the last two weeks and might perhaps be held as read. The balance sheet showed a very satisfactory result for the past year's working. After writing off the balance of preliminary expenses and allowing liberally for depreciation of the Clunes factory and machinery (Erracht factory being only just completed nothing required to be written off for depreciation this year) and carrying forward to next year a balance of R2,566·29 the Directors were able to recommend a dividend of 15 per cent which, with the interim dividend of 5 per cent, already paid, is equal to a dividend of 20 per cent for the year. The Directors were pleased to report that the labour on the estate was sufficient, and that the cart road, just completed, greatly facilitated working. It devolved on the meeting to elect a Director in the place of Mr. Julius who retired and as that gentleman was leaving the island, he did not seek re-election. The Directors regretted to report the resignation of Messrs. Buchanan, Frazer & Co. as Agents and Secretaries. The thanks of the shareholders were due to the firm for the very satisfactory manner in which they had conducted the business of the Company since its formation.

The meeting would also require to elect an auditor in the place of Mr. Guthrie who retired but who was eligible for re-election.

Several questions were asked by Mr. George Vanderspar relative to the acreage coming into bearing and the amount of reserve available.

Mr. TATHAM moved the adoption of the report and the payment of a dividend of 15 per cent.

Mr. VANDERSPAR seconded and the motion was adopted.

On the motion of Mr. TATHAM seconded by Mr. FORSYTH. Mr. W. H. Figg was elected a Director in succession to Mr. Julius.

Mr. Gordon Fraser moved and Mr. Tatham seconded that Mr. Guthrie be re-elected auditor. Agreed.

The meeting, on the motion of Mr. Forbes seconded by Mr. Vanderspar, resolved to accord a hearty vote of thanks to Messrs. Buchanan, Frazer & Co. the retiring agents and secretaries for the satisfactory manner in which they had conducted the business of the firm since its formation.

A vote of thanks to the Chairman brought the meeting to a close.

SALE OF A NATIVE TEA GARDEN AT PUSSELLAWA.

Aug. 17.--The nearly 6 acres of 2 year old vigorous tea was sold R700 to Ludowicke, owner of adjoining garden. There was a good attendance of native proprietors intent only on securing a bargain, if possible. Under all the circumstances it fetched about its actual value.

THE CORAL TRADE.

Owing to the depression in the coral trade, the Italian Government forbade coral fishing on the Sciacca banks in 1891. Manufacturers have thus been working their old stocks out. The finest coral still commands its price, but unless new banks are discovered its quantity must decrease from year to year, the Messina banks being practically exhausted. Some years ago a new bank was discovered not far from Malta, but the fishermen did not take the bearings of it with sufficient accuracy, and, although her Majesty's Government at Malta gave assistance, the bank has never again been found.—East Anglian *Times*.

EILA TEA COMPANY.

A general meeting of shareholders of the Eila Tea Company of Ceylon was held in the Registered Office of the Company, No. 6, Prince Street, on the 16th August. Mr. Henry Bois presided, and there were present Sir G. W. R. Campbell (by his attorney, the Chairman), Messrs. Tarrant, H. G. Bois and W. Moir. The Report, which is in the following terms, was held as read :—

The Directors have the pleasure to submit their Report and Accounts for the year ending 30th June, 1895.

The result of the working for the year may be considered satisfactory. The estimated crops have been realized and the prices obtained for the Tea sold have been considerably higher than those of last year. The average net price for 1894—95 is 42·83 cts. per lb. against 36·27 cts. per lb. in 1893—94.

No further Tea extensions have been undertaken in 1894—95, the expenditure this year having been incurred on the land opened previously.

The net profit for the year, after allowing R9,372 35 for depreciation, is R52,864·28 (equal to 17½% on the Capital of the Company) to which must be added the balance brought forward after payment of the Dividend for 1893—94 of R2,331 65 and the surplus value of 1893—94 Crop R1,899 20 together aggregating R57,095 13. Out of this an interim dividend of 5 % has been paid leaving R42,095 13 available for distribution.

The Directors recommend that this sum be disposed of as follows, viz :—That Dividend of 10 % be declared on the share Capital of R300.000 (making 15 % for the year) .. .. .. R. 30,000 00

That a sum of R10,000 be carried to Reserve Fund 10,000 00

Leaving to be carried forward to next a/c 2,095 13

R42,095 13

The Estates now consist of

Eila ..	410 acres Tea, 5 years and upwards
	50 acres Tea, 1 year old
	105 acres Tea, under 1 year
	392 acres Forest
	957 acres
Kanangama ..	200 acres Tea, 5 years and upwards
	15 do 2 do do
	108 acres Forest
	323 acres

Mr. H. Tarrant retires in accordance with the Articles of Association, but being eligible offers himself for re-election.

The Shareholders will also have to elect an Auditor for Season 1895-96.—By order of the Board of Directors, J. M. ROBERTSON & Co., Agents and Secys.

Colombo, 30th July 1895.

The CHAIRMAN in moving the adoption of the Report, said the information which was before the meeting embodied everything which, he thought, would be of interest to shareholders, so that unless anyone had a question to ask there was nothing he could add to what had been submitted regarding the working of the past half-year. The price obtained for tea during the 12 months ending 30th June was considerably in advance of the price obtained in the previous year, which, in itself, was a very satisfactory feature. The crop on Eila was estimated at 210,000 lb. and on Kanangama 150,000 lb.—very much the same figures as last year. The condition of Eila estate was in every way satisfactory. Mr. Gibbon in his report of date 1st August wrote that the new clearing was a great addition to the value of the estate. This new clearing would produce now 15,000 lb of crop. The report on Kanangama was not very satisfactory. Mr. Gibbon wrote: "Kanangama, I am sorry to say, is suffering from an attack of *Helopeltis*, more especially, in field No. 2 and No. 3 division which had the disease so badly two years ago ; Nos. 8 and 3 fields are not so badly attacked ; No. 1 is fairly free and coolies are now collecting the insects at the rate of 3,000 per day." In the reports for the last two years very much the same report was sent in. In 1893 there was a bad attack and 1894 did not seem to have been so bad. Still the conditions were not very different, but, as energetic measures were being taken to keep the pest in check, he did not think they had any reason to believe the property would be seriously effected. The fields that had been attacked had been pruned down for a time, and that would affect the yield, but he gathered from what Mr. Gibbon and the superintendent wrote that the yield of crop would be pretty much what had been estimated. He moved the adoption of the report.

Mr. MOIR seconded and the report was adopted.

Mr. MOIR moved that a dividend of 10 per cent be declared on the capital of the Company.

The CHAIRMAN seconded on behalf of Sir G. W. Campbell and the motion was adopted.

On the motion of the Chairman seconded by Mr. H. G. Bois, Mr. Tarrant was re-elected a Director, and it was proposed by Mr. Moir seconded by Mr. H. G. Bois and agreed to, that Mr. Shattock be appointed auditor for the ensuing year the remuneration being fixed at R50.

This was all the business and the meeting terminated with a vote of thanks to the Chair.

VARIOUS PLANTING NOTES.

SEED-GERMINATION.—It has been ascertained by an extended series of experiments that rye and winter wheat will germinate in soil the temperature of which is as low as 32 degrees. Barley, oats, flax, clover, and peas will sprout at 35 degrees. The turnip is as cold-blooded as the rye and winter wheat, but the carrot needs 38 degrees, and the bean 40 degrees before they will make the initial effort to send the life-shoot in search of air and light.—*Home paper.*

TOBACCO IN NORTH BORNEO.—In North Borneo on the receipt of news of the very low prices fetched for last season's tobacco quite a stir was created in the colony. It is surmised in some quarters that the Bornean leaf was really worth a good deal more than it fetched, and that the cause of all this disappointment is attributable to the manœuvres of a powerful Dutch "ring" which is believed to be doing its utmost to "smash" the Borneo tobacco trade and then buy up the estates cheap when the worst comes to the worst.—*Pinang Gazette.*

TOBACCO AT TRINCOMALIE.—Tobacco now being cured, has been grown extensively this year at Nilavelli, where Mr. Alvapillai of Ploly, better known by the very familiar name of Muthalaliyar, there owns several acres of tobacco lands. In consequence of the increased demands yearly for jungle lands at Nilavelli for growing tobacco, the Government has already surveyed several lots of ground there, and has notified the sale of a few plots early in May ensuing. The acre rate, it is thought, will range between thirty and sixty rupees.—*Cor.*, Local "Times."

THEY APPEAR TO HAVE A ROUGH AND READY WAY OF TREATING TEA on its way down from Sylhet. A planter noticed the other day that some forty chests of tea—his tea which were packed in front of the saloon were getting wet. An official noticed it too, and had them covered up with an old purdah, which was secured to the boxes by nails driven into them. As the nails were two inches long, of course they pierced the lead. The advantages of the metal tea chest are apparently quite realised by Sylhet and other nothern planters, but they are afraid to use them on account of the rough treatment they will have to put up with. It is a wonder the planters stand this sort of thing.—*Bombay Gazette.*

NOTES FROM UPPER BURMA.—A former Ceylon man writes to a contemporary from Upper Burma:—"I have been over two months in Burma now, and have managed to travel more than 1,500 miles, and have seen a lot of varied country. The farthest point north I have reached is Shwedwin, 688 miles from Mandalay by boat. I had some fair shooting—sambur, wild duck, goose, and peacock; also saw tracks of bison and elephant, but had no time to follow these up. All the country up there is more or less hilly, and looked the very spot for tea and coffee—plenty of water and big timber, and the rainfall about equal to some parts of Kotmale and the country round Kandy; but the difficulties of labour and transport I am afraid, could not be got over. Freight by river steamers is enormous, and is more or less a monopoly of the Irrawaddy Flotilla Company, Limited."

TEA: AN OUTCOME of the overproduction scare has been the envy with which tea planters have come to look on the millions of people in India who should be, but are not, tea-bibbers. Several suggestions have recently appeared for capturing the Indian taste among which was the issue of free samples. It is realized now, however, that that this would be rather an expensive experiment, while another point which has impressed itself on enthusiasts is that it would be fatal to create a demand for highclass tea at low prices. The idea apparently is to teach the native to drink tea, the cheapest kind for choice, and then to feed the taste with stuff that will suit the depth of his pocket. One curious suggestion for arousing a passion for tea is to supply the jails free for a time, and to sell the tea later on at low rates. This is beginning at the bottom of the social ladder with a vengeance! It would be no bad idea to subsidise public places of amusement to hand round tea free of charge on feast occasions and to advertise it as a fine medicine against certain prevalent disorders.—*M. Times*, July 11.

THE "AGRICULTURAL GAZETTE" of New South Wales, Vol. VI. Part 5. May, 1895. Contents:—
Useful Australian Plants, Beech or White Beech, (*Gmelina Leichhardtii*, F. v. M.), J H Maiden; Weeds of New South Wales, Part III.—Digests of Reports from Country Districts (continued), J H Maiden; Botanical Notes, Yorkshire Fog (*Holcus lanatus*, Linn.); Is Goodia Poisonous to Stock?; Range of *Marlea vitiensis*, Benth, J H Maiden; Winter and Summer Protection for Bees, A. Gale; Report on an Investigation into the Potato Diseases prevalent in the Clarence River District, R Helms; Prospects of the Frozen Meat Trade on the Continent of Europe, A. Bruce; Beef-producing Breeds of Cattle, J L Thompson; New South Wales Tobacco in London, C R Valentine; Export of Poultry to England, C R Valentine; Practical Vegetable and Flower Growing, Directions for the month of June; Orchard Notes for June; General Notes, Warning to Fruit Exporters: Abortion in Cows; Remedies for Plant Diseases; To Destroy Stumps of Trees; Opium Poppy; List of Agricultural Societies' shows, 1895.

"LADY BIRDS" AND COFFEE IN HAWAII.—The following is on the whole encouraging for Mr. Green's experiment:—

"A report from the Kona Coffee Association, states that the blight still threatens to seriously injure the coffee estates in that district, owing to the fact that the lady birds prefer the guava bushes to the coffee trees, both being affected in the same way with the blight. The report assigns as a probable reason for this preference for the guava bushes, the faet that the latter furnish a better breeding place for the larva. If this be so, the trouble will only be a temporary one, as the lady birds must soon increase in sueh numbers as to eover all the bushes and trees in the district that furnish food for them. In other words, it is a question of owit; but whether the planters can afford to mile so long is quite another matter—one of dtaalrs and cents, as well as patience."—*Honolulu Planters' Monthly, for June.*

TEA CULTIVATION IN JAVA.—It will be seen from the figures we append that Java last year sent to Europe over $8\frac{1}{3}$ million lb of tea. The *Bataviaasch Niewsblad* states that the cultivation of tea is extending more and more in the Preanger. Tea is gradually taking the place of coffee and einchona on the old plantations of Pandan Aroca belonging to Mr. Massink, Tjiwangi owned by Mr. Bingley, North Tjempaka belonging to Mr. Holland, and on Passia Telaga Warna; which new plantations have been opened on the estates of Tjidiangkar, Goenoeng Besir and on a piece belonging to Mr. van der Smithe. All these estates lie in the neighbourhood of Goenoeng Kosa. In the Bandong district also new tea plantations are being cultivated: *inter alia* Mr. A. Mohr has bought a large lot in the neighbourhood of the Kadjamandala from the N. I. Handelsbank, and Mr. Furth is busy with a newly opened plantation.

The Exports of Tea from Java to Holland and England for the eleven years 1884-94 have been as follows:—

	To Holland.			To England.		
	Kilograms.		Eng. lb.	Kilograms.		Eng. lb
1884..	788,903	=	1,735,586	1,974,381	=	4,343,638
1885..	750,446		1,650,981	1,705,850		3,752,870
1886..	1,074,804		2,364,568	2,084,698		4,586,335
1887..	1,399,999		3,079,997	1,539,477		3,386,849
1888..	1,635,676		3,598,487	1,603,812		3,528,386
1889..	1,461,037		3,214,281	1,821,579		4,007,473
1890..	1,376,041		3,027,290	1,256,093		2,763,404
1891..	857,516		1,886,535	1,782,919		3,922,421
1892..	2,097,444		4,614,372	1,897,535		4,174,577
1893..	1,905,804		4,192,768	1,979,246		4,354,341
1894..	2,495,209		5,489,459	1,311,268		2,884,789
	15,842,879	=	34,851,324	18,956,858	=	41,705,083

A DIVIDEND of 35 per cent has been declared by the Hindoo Tea Company, Limited, for the year 1894, and is payable to the shareholders at the Company's registered office at Darjeeling.—*Indian Planters' Gazette.*

The Heathen Chinee is Peculiar.—In the good old days of the China tea trade the little dodges of the Chinese, or some of them, for it is not fair to tar them all with the same brush, were numerous and varied. It has been said that the decline in the tea trade would teach the Celestial a lesson, and that he would set his house in order and teach the world many things. Presumably he has not commenced to reform yet, or else old habits fondly cling to him. The following extract from the Hankow report of Messrs. Evans, Pugh, and Co. shows that "tricks that are dark" still find favour with John when an opportunity occurs. "There has been very great trouble and annoyance on all sides," says the report, "in consequence of teas, Ningchows in particular, having been sold from false muster chests. In some cases 'cuts' have been sufficient to allow for the difference in quality, but there are many instances where condition is poor, and actual rejection the only safe course."—*H. and C. Mail.*

The Colombo "Packet" Tea Industry Threatened.—We fear the example of Messrs. Nelson Moate & Co. of New Zealand is likely to be followed in the other Colonies and that the prayer presented will be acceded to, at any rate where anti-Free Trade views prevail. The substance of the Petition to the New Zealand Parliament is as follows:—

2. That a very large quantity of tea is annually imported into this colony in wholesale packages or parcels.

3. That after its arrival in the colony it has been the custom of the importers, for the purpose of the tea trade, to divide the wholesale parcels into packages of 1 lb. and ½ lb. weight, and boxes of from 5 lb. to 20 lb. weight.

4. That in the making up and the sale of such small packages regular employment is given to many hundreds of men, women, boys, and girls in making wooden cases, paper bags, tin cases, printing labels, and mixing, wrapping, and packing the tea, and thousands of feet of timber are annually used in connection therewith.

5. That recently a practice has been started of having the small packages of tea packed in India, Ceylon, and elsewhere by coolie, Cingalese or other foreign labour, and so imported into this colony, to the great detriment of the labour industry of New Zealand.

6. That such practice is largely on the increase, and if the Parliament do not impose an extra duty of 2d per lb. on all packets and boxes of tea under 20 lb. in weight it will only be a matter of time before all the tea merchants in the colony will have their teas packed for them in Ceylon, India, or China, and thus many thousands of pounds now annually spent in employing labour in New Zealand will be expended in the above-mentioned foreign countries.

7. The following businesses and industries will suffer considerably, viz.:—Timber merchants (because thousands of feet of timber are used every month for making cases), carpenters (who are employed to make up the cases), bag makers, paper manufacturers, printers, tinsmiths, tea mixers, packers, and property owners.

8. That the compenent parts used in the making up of the packages made up in India, Ceylon, or China escape duty altogether, whilst those traders who pack up in the colony have to pay duty as follows:—viz.: 25 per cent on paper bags and labels, 1s 6d per cwt. on lead.

9. That it having been found that the above practice was seriously affecting the tea industry in the colony of Queensland, an extra duty of 2d per lb was imposed by the Legislature of that colony on all tea imported in packets and boxes.

10. The public will also in many cases be defrauded by having very common and inferior tea imposed upon them, in packets, upon the pretence that being labelled as "packed in Ceylon" or "India" the tea must be of good quality.

Coffee Planting in Klang, Straits Settlements.—Mr. J. H. M. Robson sums up the position of Klang as a field for coffee in his annual report by showing that 2,740 acres have been taken up by Europeans during the year, while 3,810 acres have been surveyed and will shortly be offered for sale. Coffee is, in fact, King of Klang. We shall give detailed information in an early issue.

Famine at Nyassaland.—Mr. R. Caldwell writes to *De Paarl* from Nyassaland, saying: "A great famine has come upon us. Millions of locusts have arrived, and have devoured every green thing, except coffee plants. The kafirs' mealies were all consumed. They sowed again, with the same result. . . . Hunger and death stand at the doors of the people of this land, unless provisions can be imported. For the people around us, a famine fund of £1,500 would be required.—*Natal Mercury*, June 14.

Ceylon Tea in America.—Our readers will be interested to know that the Ceylon Planters' Tea Company whose admirable brands of tea, Bhud, Tiffin and Bungaloo have won their way into the Vanderbilt, Astor, and leading families in all the large cities, are willing to send a sample free of charge to all applicants. The president of the company, Mr. S. Elwood May, whose skill, energy and intelligence has done so much for the island of Ceylon, informed me that they were giving away thousands of samples daily.—*American Paper.*

How Capital is Leaving Ceylon through the Official Land-Sales Policy.—A proprietary planter of large experience writes:—"I was pleased to read 'A.J.I.'s' letter and your editorial remarks in the *Ceylon Observer* of 15th inst. I endorse every word you and he write. There is no doubt the colony is at a standstill, and, as you truly remark, a *great* amount of capital is leaving the island, more, perhaps than one thinks. I conclude £80,000 to £100,000 is invested by Ceylon men at the present moment in coffee, tea and coconuts outside Ceylon, and all in the space of the last 3 years, and more going and more bound to follow, all of which might well have remained in the island. Capital must find vent somewhere. I have had several applications for investments outside Ceylon from men who cannot get a 'wee bit' of land put up in the island. Many men are putting their money, having nothing better to do with it, into old abandoned, poor, wasted, unsuitable land, whereas India is opening and extending on virgin soil. This will tell against us in time." We commend these remarks to the serious attention of the Ceylon Government.

Coconut Planting appears to be a thriving and promising investment in Ceylon just now. The price (in silver) has gone up, it is said, beyond the most sanguine expectations of those interested, and as a result the cultivation is extending rapidly. Capitalists invest their money in coconut plantations, with the greatest confidence, and the acreage of new lands that will be opened during the next planting season will be much over what it was in previous years. The question that suggests itself is whether the prepent prices will keep, up, or if they should come down, how far should it be to appreciably affect the industry. No other planting product, whether native or English, rice or tea, could stand just at present a fifty per cent. reduction, but "it can be safely said that coconuts would survive even a much greater reduction." The price may come down through over-production, but but such an eventuality as over-production is not likely to occur for, perhaps, ten years, or till all the young plantations which exist at present come into bearing; it may go down through a waning of the demand, but there is no immediate likelihood of another product replacing the coconut partially or wholly; in fact, the field for coconut products is daily extending. It is admitted that the fall of exchange has not been without inflence in promoting this industry.—*British Trade Journal.*

CEYLON AND INDIAN TEAS.

LONDON, July 26.

I had not had the opportunity before my last letter of reading the report of the Indian Tea Association. This, and what passed at the meeting of that body held last week, you will have been informed by the *Home and Colonial Mail* posted you last Friday. I refer to this matter now, because what fell from Mr. Berry White, the Chairman of the Association, has an important bearing upon a subject that was discussed by me this week with a well-informed ex-colonist. We were referring to recent writings by you on the subject of the mutual interests of

CEYLON AND INDIAN TEAS

in opening new markets for the teas of both countries, and more expressly that of America. "The *Observer*, to my mind," remarked my interviewer, "omits from consideration one, and that the most important, point of difference between the two tea-growing countries. It insists that by finding new outlets for Indian tea, the home market is strengthened to the advantage of both India and Ceylon. This would, I think, be perfectly true if both of those countries were on the same footing as regards the possibilities of further and extended cultivation. But while Ceylon can do but very little more in that way, the end of her tether being nearly reached, the possibilities for India are almost boundless. Let Ceylon, therefore, in her sinking of all rivalry, aid India in widening the scope of her markets, and she offers a direct inducement to her great rival to open out fresh land and to pour increased supplies into all the markets wherein Ceylon and India will compete. In that sense I cannot concur with the *Observer* in its denial that there exists any competition between India and Ceylon, or in its accusation that both countries have identical interests. Ceylon is, in fact, chained to a stake. India can enlarge her circle at will. Ceylon only holds her own because her teas always secure a preference among newly attacked communities. Yes, I know perfectly well that the *Observer* has the weight of general opinion on its side, but there are some who, like myself, differ from that general opinion. Read Mr. Berry White's speech as Chairman of the Indian Tea Association, and you will see how strongly he holds the view I have stated to you. He goes even further than I am prepared to go, and sees rivalry and competition in every step of progress made by either of the competing countries. Nor, it is evident, will he admit that Ceylon can be acting honestly in any desire she may express for joint action, or at least for the sinking of any apparent rivalry. Ceylon, Mr. White evidently thinks, must anticipate—as she probably would secure—getting the best in the results to any such arrangement. Well, I don't go the length of Mr. White's arguments, but it seems evident to me that any mutual action must be limited and restrained by the consideration I have mentioned :—viz. that India has boundless possibilities for extending her cultivation, Ceylon is markedly almost without a chance for it."

I have mentioned the opinions recorded above to those whom opportunity has afforded me a chance of discussing them with. I find, however, the view almost unanimously held that India and Ceylon teas are of so closely

ALLIED A CHARACTER,

that where one penetrates, the other will possess equal chances. Also that this alliance of character ranges them against a common opponent, China tea, wherever it may be met with, and that united effort should be made to "cast out the devil" wherever he may be met with. But although it is admitted that I find this view almost universally prevalent, it seems to me that there is some cogency in the reasoning stated by the friend quoted above. It is difficult to realize a thorough community of interest when the aspects for the future are so wholly unlike. However I don't pretend to offer an opinion on a subject of which I know so little.—London *Cor.*

[We cannot follow the logic of our correspondent's friend. Suppose that Ceylon reaches its maximum export at 100 million lb. and that India goes on to 200 million lb., unless a market is found for the Indian surplus in America, will it not come on the London market and there drive down the Ceylon, equally with the Indian average price? We are, however—as we have often said—against the policy that would limit cultivation and production in Ceylon, as only tending the more to encourage planters in India, Java, &c., to cultivate tea far more extensively than they would do if they thought Ceylon men under the auspices of their Government, were going ahead.—Ed. *T.A.*]

BRAZIL COFFEE NOTES.

In the interior of S. Paulo coffee trees have been injured by frost. A S. Paulo telegram of the 28th ult. says that "the future coffee crop is appraised at about thirty millions." Thirty millions what ? It is to be presumed that sterling is referred to, but it would be well to make all such statements precise.

The *Diario Popular* of Sao Paulo says that the recent cold weather was exceptionally severe at Sorocaba, the thermometer making one degree below zero (Cent.) There were heavy frosts, and it is said that the coffee plantations have suffered severely.

The exportation of Coffee from Santos during the year ending the 30th ult., is given by one of our exchanges as 3,904,078 bags.

The damage caused by frost to young coffee trees in the municipal district of S. Simao, Ribeirao Prete, Batataes and Jaboticabal is said to be enormous and will, it is thought, diminish considerably the crop for next year, which was expected to be large. —*Rio News*, July 2.

CEYLON PATENTS.

The following Grants of Exclusive Privilege have been made under "The Inventions Ordinance" during the half-year ended June 30, 1895 :—

457.—To William Wellesley Pole Fletcher of Wishford, Lindula, Ceylon, at present residing at 3, Edinburgh Terrace, Kensington, in the county of London, England, Civil Engineer, for "improvements in vehicles adapted for conveying chests of tea or other goods along common roads."—Jan. 2, 1895.

422.—To James Adam Hunter of Sunnycroft estate in Ruwanwella in Kelani Valley in the island of Ceylon, for "improvements in apparatus for cutting and gathering tea shoots and leaves "—Feb. 7, 1895.

445.—To Alfred Francis Bilderbeck Gomes of 24, Alfred Place west, south Kensington, in the county of London, England, chemist, "for an improved process for the preparation of textile vegetable fibres."—March 2, 1895.

448.—To Charles Mray Htorvath of Arad in the Kingdom of Hungary, publisher and engineer, for improvements in and connected with apparatus or machines for producing type-matrices."—March. 17, 1895.

449.—To John Carlyon Roberts of 16, Cromwell Grove West Kensington, London, England planter, for improvements in the manufacture of folding boxes or cases.—March 7, 1895.

451.—To Charles Smith of 39, Albert Road, Peckhams London, England, Commission Agent, for improvement, in sheets, counter-panes, quilts, curtains, shrouds and other like articles for protection against flies and other insects.—May 11, 1895.

456.—To William Jackson of Thorngrove, Mannofield, Aberdeen, North Britain, for improvements in apparatus or machinery for disentangling or separating tea leaves that get interwoven or united to each other in the process of rolling.—May 14, 1895.

454.—To Mir. Sultan Moheedeen of Madras, for an invention for sultan water lifts and buckets.—June 1, 1895.

453.—To Henry Cecil Fellowes and William Robert Crozier, merchants, both of Leadenhall Buildings, 1, Leadenhall street, in the city of London, and Henry Ferguson, Engineer, of 60, Ranelagh road, Leytonstone, late of 10, Cleveland Terrace, Ranelagh road Leytonstone, in the city of Essex, England, for improvements in the extraction and preparation of the fibres of Rhea and other grasses and fibrous vegetables.—June 1., 1895.

452.—To Edward Robinson of 4, Castlenau Gardens, Barnes, London, England, merchant, for apparatus for drying Tea, grain and other substances.—June 5, 1895.

447.—To William Gow, of 13, Road Lane, in the city of London, England, Tea broker, for improvements in apparatus for treating tea leaves.—June 5, 1895.

E. NOEL WALKER,
Colonial Secretary.

Colonial Secretary's Office,
Colombo, August 4, 1895.

INDIAN PATENTS.

Calcutta, Aug. 8.

Applications in respect of the undermentioned inventions have been filed, during the week ending 3rd Aug. 1895, under the provisions of Act V of 1888:—

For Improvements in Apparatus for Rolling Tea Leaf and the Like.—238 of 1895.—William Jackson. of Thorngrove, Mannofield, Aberdeen, North Britain, Engineer, for Improvements in apparatus for rolling tea leaf and the like.

For Improvements in Tea Leaf Withering Racks. —240 of 1895.—Edward Bulteel, tea planter, at present residing at Kalacherra, in the district of Cachar, in the Province of Assam, and Henry Joseph Kersting Green, Engineer, of 30, Clive street, and 14, Garden Reach in the town of Calcutta, for improvements in tea leaf withering racks.

Specifications of the undermentioned inventions have been filed, under the provisions of Act V of 1888:—

For Improvements in Tea-rolling Machinery.—197 of 1894.—Lawrence Herbet. Sutton, of Panitolla, Lakhimpur, Assam, Engineer, of the Jokai Assam Tea Company, Limited, for improvements in tea-rolling machinery. (Filed 26th July 1895.)—*Indian Engineer.*

PLANTING AND PRODUCE.

TEAMEN AND GROWERS IN CHINA.—Consul Mansfield, in his report on Foochow, says that to the teamen, or native traders, the 1894 season has, with few exceptions, been a fairly profitable one, while the growers are said to have done only indifferently well. As regards the latter, even if they have profited but little on the sale of their produce at the new low scale of prices now ruling, the fact of their having made any profit at all goes to show how large their gains must have been in years gone by. The foreign shippers felt themselves heavily handicapped early in the season by the depression of trade both in Europe and Australasia, but through being able to buy at low prices, and helped by some improvement in the consuming markets later in the year, the season has not been altogether an unprofitable one to them. Prospects are not bright as far as they can be judged of at the moment. So far from there being any chance of an alleviation of the imposts which weigh so heavily on the trade, it is understood that there is to be an increase in the likin duties as a special war tax. Then there is a serious continual falling off in the deliveries of China tea from the London bonded warehouses, and the Australian markets have been taking year by year less China tea. Certainly the export figures show our trade with America to be steadily improving, but as yet that continent is only a small customer for Foochow Congous. No definite information is yet to hand with regard to the increased likin proposed to be levied on tea coming down from the interior. Should the rumour prove true, every possible effort will be made to induce the Chinese authorities to recognise the fact that the trade cannot bear increased taxation, and that the result can only be in the long run diminished supplies and proportionately reduced revenues.

QUESTION OF QUALITY—Much is said in the home papers, says the Consul, about the inferior quality of Chinese tea shipped to England, and recommending improvements in this direction. The fact is, however, that, speaking generally, it is only the lowest grades that find a ready market for mixing with the higher priced Indian and Ceylon teas in what is known as the "shilling canister."—The higher priced teas of good quality frequently show losses which shippers can ill afford to meet. The great bulk of the teas now shipped from Foochow are, therefore, the commoner kinds at a value, roughly speaking, of from £1 3s to £1 9s per picul (133 1-3lb). Before this tea leaves the port it has to pay in likin and export duty about 10s 6d., which is out of all proportion to its cost. The tariff duty of 2·5 Haikwan taels (say 8s) per picul was, when the tariff was drawn up in 1858, supposed to represent an average *ad valorem* duty of 5 per cent. At the prices now ruling for the leaf, the duty on finest quality, which is only exported in small quantities, is over this 5 per cent. estimate, while the common tea, which, as above stated, forms the bulk of the export, pays about 30 per cent. *ad valorem* for export duty alone, without taking likin or inland taxes into consideration. The profits made by those engaged in the business are now so small and precarious that this heavy impost is slowly but surely undermining the whole existence of the trade. From Chinese accounts the coming season's crop promises to be extraordinarily good, but the movements of the Japanese fleet in the neighbourhood of Formosa have caused something like a panic among the native merchants here, who are afraid to send their money into the country for the purchase of tea. It is difficult to foretell what the effect may be on the trade during the season now approaching.

FREE INSURANCE AND PACKET TEA.—This is the latest plan for pushing the sale of packet tea. The Lindoo Valley Ceylon Tea Company state that for the future every packet and every fancy tin of their Ceylon blends, from 1s 6d to 2s 8d per lb. will contain a free insurance policy against accidents up to the limit of £60 for three pounds £20 for one pound, £10 for half pound, and £5 for quarter pound. In addition every quarter pound packet will contain a coupon, every half pound two coupons, every pound four coupons; and when the consumer accumulates 104 of these coupons, they can be exchanged for a yearly policy of £1,000 against fatal injury or permanent total disablement, and £500 for permanent partial disablement

A TEA-TESTING CONTEST.—We learn from the *Canadian Grocer* that quite a novel departure in the way of entertaining instruction for grocers' picnics and like gatherings was introduced recently in Minneapolis, at the grocers' picnic. It consisted in a tea testing contest, whereby over fifty grocers tried their ability to guess the price of different kinds of tea under the instruction of an expert from some wholesale tea house. "The tea testing contest given at the grocers' picnic of Minneapolis brought out some strange evidence of ignorance in the value of teas in the men to whom a good knowledge of teas would mean a good many dollars in the course of a year," says our Canadian contemporary. "The three samples of tea to be tested were valued at 25 cents, 26 cents, and 19 cents respectively.

There were something less than fifty grocers taking part in the contest. The fact that one contestant marked the 19 cents tea up to 55 cents, and that there was a range of marking covering the whole range of price of teas, shows in a degree how many grocers simply make a stagger at guessing at the real value of the tea they buy. Now, not one of these grocers would think of taking some other man's word on the grade or butter they buy. Yet where a cent a pound is saved on butter by knowing how to test the grade, 10 cents a pound can be saved on tea. and this means 8 dols on a chest. The grocer who does not learn to test his own purchases of tea, yet insists on testing his own butter, simply wastes at the bung what he saves at the spigot."—*H. and C. Mail*, Aug. 9.

TRAVANCORE PLANTERS' ASSOCIATION.

Minutes of proceedings of an extraordinary meeting held at the Club, Trevandrum, Wednesday, 14th August, 1895.

Present:—Messrs. H. M. Knight (Chairman), J. S. Valentine, H. S Buist, W. O. Milne, C F. Ewart, R. T Miller, C. Cary-Elwes and R. Ross, Hony. Secy. Visitors: J. E. Fowler, President, K. D. Association, and A. D. Adams.

The notice calling meeting having been read, the Chairman and Honorary Secretary resigned, but were unanimously re-elected.

The following resolutions were then put before the meeting and carried.

I. Proposed by Mr. J. S. VALENTINE and seconded by Mr. K. T. MILLER:—"That subscriptions to American Tea Fund be continued, viz., four annas per acre under tea, and half an anna per maund of tea produce being rates fixed by Indian Tea Association,"

II. Mr. Ackworth's letter *re* Association paying half share of delegate s expences to United Planters' Association conference having been read. It was proposed by the CHAIRMAN that the following telegram be sent to Mr. Ackworth: "Travancore Association request you will act as delegate in terms of your letter 3rd Aug. Reply."

III. Proposed by CHAIRMAN, that a considerable deficiency exists in the current year's accounts. Each estate be asked for a donation of R10 for the year 1895, also that subscriptions for year 1895 be now called for.

IV. That the attention of Government be drawn to the resolution passed at general meeting held in 1894 *re* giving notice to owners of estates on which arrears of tax are due, and that an English translation accompany the vernacular, also that the Secretary be asked to revise the scale for calculating the duty on Liberian coffee the present rates on Easternside being equal to double duty.

V. That the following resolution be added to telegram to the Delegate "Trust that prompt action will be taken in laying the subject of Act XIII. before the Secretary of State by the United Planters' Association."

VI. Proposed by Mr. J. S. VALENTINE and seconded by Mr. H. M. KNIGHT:—"That this Association views with apprehension the evident determination of Government to refuse, on the plea of forest being reserved the granting of extensions to owners of present holdings, who have put all, their available land under cultivation and that Government be urged to grant applications for such extension within reserves."

VII. Proposed by Mr. R. T. MILLER and seconded by Mr. H. S. BUIST:—"That with reference to the new medical grant-in-aid regulations, Government be requested to extend the grant to medical practitioners in residence in the tea districts."

VIII. That Government be requested to put in repair the bridle path from Kalthuritty bandy road via Shalakarey to Patanaveram, also that Government be asked to make a yearly grant of R120 to pay for boatman at crossing of river on the Rockwood cart road, the erection of Mynall and Kildonnan bridges as per estimate and former applications; that the attention of Government be again called to the fact that no travellers' bungalow exists between Coullapooly and Naduvangnad, a distance of 27 miles to the great inconvenience of travellers on that road.

Before closing the meeting the CHAIRMAN said he hoped before they met again next January, that a scheme would be formulated for combining the three districts of Travancore into one Association. The arrangement would not interfere with the present existing Associations, which would control their local business, but would strengthen their hand when dealing in matters with Government in which all were equally interested, and it must be obvious to all members of the Association, that it would be advantageous to have a Secretary near the Capital, who would act in common for the planting community. "Unity is strength," and he was sure that this fact would not be overlooked by any planter, at a time when Travancore seemed fairly launched into prosperous times; and provided fair justice is given us over Act XIII, he saw no reason why Travancore should not become the premier tea district of India.

R. ROSS, Hon. Secretary.

(Signed) H. M. KNIGHT, Chairman.

THE RIVAL MANUFACTURERS OF CAFFEINE.

We (*Chemist and Druggist.*) understand tha Messrs. Boehringer and Sons, of Mannheim have just opened a factory in London where they have put up a plant for denaturing tea, sweepings for exportation to Germany. The two English name manufacturers offered to take the entire supply of sweepings from the docks on contract at 10s. per ton above the regular quotation of 6*l*. 10s per ton, but the Dock Company refused to entertain this proposal, and supplies all makers, British or foreign, equally at the old figure so far as supply goes. Four tons of denatured leaves are said to have just been shipped to Germany.

THE PLANTING DISTRICTS OF CEYLON IN 1895.—NO. I.

HOW IT STRIKES AN "OLD COLONIST."

"Together let us beat this ample field
Try what the open what the covert yield."

The gentleman who objected to his estate being described as *abandoned*, merely because it ceased to grow coffee, had some reason on his side, especially if his estate lay at a moderate altitude in one of the fertile valleys of Central Ceylon. There are few more interesting scenes than a wild maze of vegetation, and this may now be seen in perfection, where 25 years ago the land was devoted to one product—

A THOUSAND VARIETIES

where erstwhile only one reigned supreme. The rugged hill-side with its stiff, forced and formal coating of coffee is now dressed in the softest of drapery, plants growing with a spontaneity and arranged with an effect which makes us marvel at the hand of nature. There stands out like a gigantic prince's feather, the grand old *Kitul* overtopping the noble *Jak*, the sweet-scented flowers of the *Sapu* perfume the air, while the leaves of the firmly rooted *Bogaha* quiver in the morning sun. There too the shapely *Toon* has taken its appointed place, more at home than in its own native country where with characteristic perversity it is called a cedar! The umbrageous *Inga* has also found its way here and throws a refreshing shade over the tangled net-work of lovely creepers covering every inch of ground, the *Tropæolum* trails through the *Lantana* while the black peeping eye of the *Thunbergia* looks out from amongst the *sensitive plants*.

Chiefly foreigners these, which have found a congenial home in Ceylon like the present ruling race; but there are many purely native plants equally beautiful and equally valuable, springing up wherever they can find space; the cinnamon and various kinds of camphor on the driest ridges, while cardamoms and ginger indicate where water is near. Guavas abound, and are much prized though to me always a disappointing fruit. But there is another and smaller fruit which deserves to be better known—not unlike the black currant, the virtues of which for colds and throat affections, the gudewives at home place so much faith in—it grows in pretty clusters on a handsome tree of moderate height—and curiously enough the Sinhalese call it "*Ugu-ressa*," Ugu meaning I believe, the throat.* The *Papaw* is common and either for vegetable or fruit is a great boon; the *Avocada pear* is less seldom seen, and no great loss as the variety in Ceylon is rather a fraud; *Oranges* plentiful but sour. *Pines* might pass had we never tasted them at Guayaquil. The sonsy *Soursop* is appreciated on a hot day, but is a poor relation and apology for the *Cherimoya*. The massive *Mango* tree provides in season the best of all Ceylon fruits. Plantains in profusion and *Tomatoes*—particularly the smaller kinds—in perfection, while the *Bead tree* from which we get our Margosa, the *Croton* and Castor oil plants are everywhere. These and hundreds more

"here disporting own a kindred soil
Nor ask luxuriance from the planter's toil."

'Abandoned!" do you call it. Ye poor dividend worshippers, may such abandon long be mine!

Seriously, the lesson to be learned from this is surely

NEVER MORE TO ATTEMPT THWARTING NATURE

especially in the tropics—by the vandalism of eradicating all the products save one passing or temporary favourite; the more mixed the more natural and permanent will the products become; and under such circumstances the "Watte" regained, will be much more interesting than the "Watte" lost.

How to turn the various Products to the best account is the absorbing problem for the planters of today. To arrange the robust and strong so as to shelter the more fragile from fierce winds and to nurse the shade-loving fruitbearer under the arms of umbrageous mothers.

Some of the best examples of what it is possible to accomplish in this way I have recently visited,

ROSENEATH AND ANNIEWATTE

within a mile of Kandy. To those who remember these estates twenty or even seven years ago and have not seen them since, a visit now will indeed be a revelation. The erstwhile bleak, bare, washed and bleached ridges swept by both monsoons and greedily devouring half the refuse of Kandy with little to show for it. Now, see the sylvan shade; what a transformation in a few years!

The kindly and easily propagated *Erythrina*, the noble *Jak* and graceful *Grevillea* form the three best shade trees. Next comes the *Inga* (named after our fast vanishing friend the Inca of Peru). Under these the cacao thrives and yields in a manner marvellous to see. True, no San Antonio can be expected here; but, such cacao as may be sufficiently remunerative; while tea and Liberian coffee, though not courting shade, prefer it to the wind-blown dry quartz which now responds more profitably to the manure.

The surface soil is greatly enriched by the falling leaves from the shade trees which drawing their chief nourishment from the subsoil, return 50 per cent more than they take from the food of the profit-giving products.

Altogether the transformation is very striking and pleasing, while the returns are, I believe, in keeping with the enhanced appearance of the estates. The possibilities are thus shown to be something not dreamed of in the early days of planting. In this immediate neighbourhood or within a radius of ten miles of Kandy

400 SQUARE MILES

might be treated with equal success. Labour—or rather the want of it—is the chief difficulty which meanwhile bars the way.

The native has unquestionably deteriorated, both Tamil and Sinhalese especially near populous centres where they come in too frequent contact with Europeans. And this is one of the saddest facts that strike the returning Colonist:

"Man seems the only growth that dwindles here,"

And this does not apply merely to the poor demoralized coolie, but even more so to the families of the well-to-do Sinhalese.

Let me record one example out of scores:—Don Carolis—as I may call him—was a well-known and very presentable figure on the Gattember road 30 years ago—prosperous and deserved to be; honest, active, suave and gentlemanly; moreover as guileless a Christian as ever the C.M.S. were instrumental in saving. I well remember the late David Fenn taking a special interest in the faithful old Don and frequently calling at his pretty white bungalow by the lime kilns.

Don had a name-son, his special pride, a bright, keenly intelligent and promising boy. With what evident delight the old man smiled upon his son as he returned from school laden with books! No expense was spared in his education, though at home every economy was practised in order to leave at death the competence he had so carefully acquired, to his much loved son. Poor old Don is now gone, so too is his hard-earned wealth, and the precious son may now be daily seen loafing around the corner grog-shop, the bright intelligent eyes now blood-shot, glassy and void of expression, but with shameless persistency he begs a cent of the passer-by:

"I know you, sir," he said to me yesterday in better English than manners—"I remember you coming to my father's house with Mr. Fenn."

"*You drunken scoundrel*"! I replied. "Are *you* the son of good Don Carolis?"

I must leave the reader to moralize. My function being merely to see and try to tell in a plain way what may daily be witnessed around beautiful Kandy. Next week I purpose re-visiting some of the higher regions of the island.

A TOUR ROUND THE COCONUT DISTRICTS.

DELICIOUS MANGOSTEENS AND ORANGES AS WELL AS—COCONUTS GALORE! TWO PLANTING VETERANS: W. H. W. AND W. J.

At what age do mangosteens bear?—is a question often asked, and it may interest your readers to hear that on Mr. Wright's model coconut estate at Mirigama, there is a little grove of beautiful four year old mangosteens yielding a very nice crop which rather upsets the native theory that if you plant mangosteens your children get the fruit.

I tasted oranges also (the trees grown from seed) on the same estate, more delicious than any I have ever eaten before. They were a sort of large mandarin and almost seedless. Under the

* One Sinhalese authority, says that it is of the bark of the tree, a decoction for throat purposes is made.—ED. *T.A.*

guidance of the veteran W.J., I have been making a tour round the coconut districts and Mr. Wright kindly put us up and showed us a model estate indeed! Over the whole 300 acres there is not a single vacancy, and the marvellous care with which every detail has been thought out, and wrought out, convince one that our host is a personality far above the average. The bungalow nestles in a grove of fruit trees and the garden is full of beautiful flowers, while many rare orchids and other plants have the constant care of the proprietor, and the hospitality dispensed is unbounded.

W.J. is building up a big thing in Coconut property for the Ceylon Tea Plantations Company and in a few years, even if their handsome tea dividends should disappear, their income from coconuts will be larger. Happy are the shareholders whose directors provide so amply for the present as well as lay up for the future as is being done in this Company. K.

CEYLON TEA IN NEW ZEALAND.

Mr. John D. Darley, formerly of our planting community and well-known in Ceylon, writes to us from New Zealand under date 18th July:—

I enclose you a cutting from a local (Auckland) paper with reference to your teas. I must say I do not agree with it, and find there is nothing to equal good Ceylon tea. But a quantity of the tea sold as "Ceylon" is mixed with an inferior quality thereby giving it a bad name:—

"In the tea market there is a plethora of undesirable Ceylons. The growers in the island where every prospect pleases and only man is vile,' are apparently plunging into quantity, and are forgetful of quality. If this policy is continued good-bye to the favouritism of Ceylon teas, which up to now have steadily advanced in popular favour. Reckless consignments of poor Ceylons have been advised from all quarters, while the difficulty of finding high-class quality is more pronounced than ever."

NATIVE CULTIVATION IN UVA.

The villagers and cultivators are reaping their harvests of paddy which seem pretty fair, but this evening's thunderstorm will I am afraid spoil some of the stacks that are not threshed out and prove to some of the lazy ones, that there is "many a slip between cup and lip," and perhaps set them levying black mail on their neighbours.—Crime is about much the same as usual and by no means decreasing; the village headmen and town Arachchies are a farce as guardians of the public, all they are good for is to levy blackmail and share the "spoils-of-the chase" with the rogues and vagabonds.—*Cor.*

COFFEE LEAF DISEASE.—It never rains, but it pours. Just after the "Secretary to the Agricultural Department, Ceylon" received a letter from England claiming the reward (mythical) for the discovery of a cure for coffee leaf disease, there comes a telegram to the same effect from a gentleman in Conoor, who is really near enough to know we have little coffee left in Ceylon, and who also ought to know that as the disease prevailed on young estates with virgin soil, as well as on old, it could not be due to a cause he names. Still, our Coonoor friend has coffee near by him in Coorg to experiment on.

DEAFNESS. An essay describing a really genuine Cure for Deafness, Ringing in Ears, &c., no matter how severe or long-standing, will be sent post free.—Artificial Ear-drums and similar appliances entirely superseded. Address THOMAS KEMPE, VICTORIA CHAMBERS, 19, SOUTHAMPTON BUILDINGS, HOLBORN,

TEA GROWING IN WENCHOW.

Consul M. F. A. Fraser writes in his Report on the trade of Wenchow for the year 1894, dated April 29th, as follows:—

The principal feature in the export trade was a large increase in the export of Tea, and this promises a large expansion hereafter, which is most gratifying to those interested in the progress of this struggling and ill-used port. Foochow will have to look to its rather faded laurels.

Green tea does not appear in the customs returns of cargo exported in steamers before the year 1893. In that year 149,467 lb of it were so exported, and in 1894 there were 253,733 lb of green, being hyson, gunpowder, and imperial. The beginnings recorded were very small, in 1877 there having been only 37,067 lb exported in steamer, and in the next year, 1878, only 90,667 lb all sorts included.

A visitor to Wenchow may see tea growing without the necessity of going so far afield as a visitor to Foochow. At Wenchow an hour's walk in almost any direction takes one into hills where tea is cultivated, as also tobacco, coir-palms, the tea-oil plant, the bamboo and the ubiquitous sweet potato. Even on the tiny river island on which the consulate stands, tea is grown by the Buddhist Priests. A cup of tea prepared "à la Chinoise" from leaves picked just outside the portals, and pure mountain water hard by, tastes delicious to the holiday pedestrian who has climbed up the steepest of stone-flagged parts over 1,000 feet to one of the numerous temples occupied by good Buddhist and Taoist priests in the surrounding hills.

Nearly all the tea exported, however, comes from the Ping-Yang region. The town of Ping-Yang is about forty miles south of Wenchow, and is reached by canals over which there is an enormous traffic, mainly in fast boats of small size propelled by hand. In the trade report for 1883, Mr. Parker mentions that an enormous export of alum to Ningpo, quite 12,000 tons a year, takes place from Ku-ao-t'ow, the port of Ping-yang, ten miles further to the south. It is from Ku-ao-t'ow, I am informed, that great quantities of tea, bought by four Ningpo Chinese merchants, is shipped on junks and taken to Hü-p'u for the province of Kiangsu, the province just north of this one, containing Shanghai, Soochow, and Nankin. The tea so shipped is of coarse complexion, and indeed it is easy to understand that the finer kinds of this delicate article better sustain a quick voyage in good steamers than a long one in "wind-jammers" like the native junk, in which conveyance of over 500,000 lb. of tea take their way to the neighbouring northern province.

As for finer teas no pekoe black tea appears in the customs returns of steamer export before 1894, and then only to the extent of 50 piculs, *i.e.*, 6,667 lb., but this first-crop tea, called pekoe, "whitedown," from the whitish down with which the leaves are covered, is grown to a much larger extent annually, and a great deal is taken overland to Hangchow, the capital of the Ningpo-Wenchow Province of Chehkiang, whence some finds its way to the large city of Soochow.

Tea-firing.—At present half of the Ping-yang product goes south to Foochow, but we may expect that this proportion will diminish if not disappear. In 1893 a beginning was made by establishing a tea-firing concern in Wenchow. It has 160 firing-pans, to attend to which eighty men are employed in the season, earning each 140 cash a day, that is to say about $1 (2s) a week. About 100 women are also employed by it in picking out stalks, old leaves, &c. from the teas at wages of ten cash a catty (1⅓ lb) The workpeople engaged in the work of sifting and packing are from the enterprising population of Hui-chow, the mountainous prefectural district in the province of Anhui, bordering our province on the west. "No business can be done without Hui-chow men" says a proverb well-known in China. These skilled Hui-chow men are paid by the season, and a double the rates of the local men. The native tea inspectors or "chaszees" are also Hui-chow men. In 1894 another firm set up 140 firing pans. These two together exported about 5,000 chests of tea last year. Three more are in train, so that in

the season of 1895 there will be five at work preparing green teas for exportation. This green tea, which is prepared at Wenchow, requires elaborate manipulation, covering a period of two months, which accounts for its greater cost. The preparation of black teas is not so elaborate. It seems almost a pity that one or two of our merchants do not settle here and buy locally. I am assured that as compared with Shanghai expenses they would save about $3 per picul (133⅓ lb., the Chinese hundred weight) on commissions, coolie hire (porterage), cargo-boat hire, godown hire, and packing expenses. However, when the long-talked-of telegraph is built, the risk of losses in making such an experiment will be of course diminished.

The Wenchow *Orange* has an enormously thick skin, easily detachable. It is st o gly scented and bitter, and is supposed to have medicinal virtues. It is exported chiefly to Tientsin and farther north, packed in tubs.

Whole streets in the city are occupied by the makers of the various parts of the paper umbrella, known to commerce as the *kittysol*, an ingenious perverson of a Spanish name for a parasol, "quitasol." Its simple components are bamboo and oiled paper, with the addition of a little decorative colour. The same thing is made in Japan, and called the "kasa," and depicted (*ad nauseam*) on Christm s cards, &c. Its domain is being invaded by what the Japanese graphically call "the bat's wing," the umbrella of European build; but while the large non-mandarin class of Chinamen are kept so poor, the difference between the shilling or two paid for the latter article and the fourpenny "kittysol" will be a financial consideration to be taken into account.

Fish-maws are boiled into a nourishing glutinous soup.—*L. & C. Express.*

EXTRACT OF PALMETTO; A NEW TANNING MATERIAL.

The palmetto palm *Serenoa serrulata*, grows in North America, and is an evergreen tree having ribbed fan-like leaves of three to four feet in diameter. Round each bud four to six leaves grow every year, and these keep green for two years, when they become yellowish brown and die off. The stalks of these leaves grow to 1½ to 3 feet in length, the leaves are collected and cut up finely, the stalks being removed. The whole is then put into large tubs and lixiviated with hot or boiling water. The liquor is then concentrated to an extract when intended for shipment. To obtain the fibres. which are useful for rope-making, etc., the parts remaining in the tubs are treated after the liquor has been drained off with chemical agents. These have the effect of separating the silicic acid and decomposing the other portions, which become converted into a gummy mass that can easily be removed, leaving the pure fibres. The tanning process with palmetto extract is the same as with quebracho (*Apoth. Zeit.*, No. 30, 1895, p. 309) —*Pharmaceutical Journal.*

Teas from the Far East.—Our Special Telegram elsewhere shows that the London demand for China teas—poor as it has been for these two seasons—is slackening even on the figures for last year. At the same time, as we learn from our files, the China exports to Odessa for Russia have increased considerably.

Closets, Urinals, Night Commodes, Stables, Kennels, &c. should be lightly dredged (after cleansing) with Calvert's 15 per cent. Carbolic Powder, to destroy bad odours and to kill or keep away insects.—The most effective preparation.—In ½ lb., 1 lb. and 2lb. dredgers, at 6d., 1s., & 1s. 6d. each, from Chemists and Stores.
F. C. CALVERT & Co., Manchester.

DRUG REPORT.

(From *Chemist and Druggist.*)

London, August 8th.

Annatto Seed.—Good bright offering at 3½d per lb.

Quinine.—Ten thousand oz Auerbach sold in auction at 1s 0¼d ; 1s 0½d is the outside price.

Coca Leaves.—A lot of dark-brown Ceylon should have been sold without reserve, but no offer could be elicited.

Cubes.—Only 17 bags were offered. The fruit was slightly mouldy fair brownish to grey, but there was practically no demand, 33s being bid and refused.

Kola-nuts.—Privately several tons have been moved off at 10d to 10½d per lb. A few bags good West Indian realised 10½d to 11d per lb at auction.

Vanilla.—Although the quantity brought forward was small it represented different varieties. Mexican beans are quite a novelty on the market, as there have not been any here for a long period. The lot was, however, withdrawn without quotation. Tahati 4d to 7d ; low foxy sold at 3s 9d per lb. Seychelles and Bourbon withdrawn.

Caffeine.—The dearth of suitable raw material is still in evidence. This scarcity is likely to continue, as the supply of such material is, and will be, restricted. Makers, although not quoting right and left, are supplying consumers according to circumstances, at from 20s to 22s per lb. A few second-hand lots may be picked up here and there at 25s to 27s 6d per lb

INDIAN TEA SALES.

(From *Watson, Sibthorp & Co.'s Report.*)

Calcutta, August 27th, 1895.

Notwithstanding the unsatisfactory news from the London market the sales held here on the 22nd instant passed off with spirit and prices for teas showing any improvement in quality were generally higher, all grades, under eight annas may be quoted from 2 to 4 pie dearer, while the better sorts sold irregularly but mostly in favor of sellers. Buyers for the Colonies, Bombay and various other markets were very keen and secured a large proportion of the tea sold. 15,513 packages changed hands, of which nearly 5,000 packages go to markets outside the United Kingdom.

The average price of the 15,513, packages sold is As. 7-11 or about 8½d per lb. as compared with 18,994 packages sold on the 23rd August 1894 at As. 9-0 or about 9½d per lb. and 13,995 packages sold on the 24th August 1893 at As. 7-9 or about 9¼d per lb.

The Exports from 1st May to 24th August from here to Great Britain are 41,786,089 lb. as compared with 39,784,288 lb. at the corresponding period last season and 39.295,591 lb. in 1893.

Note.—Last sale's average was As. 7·8 or about 8d per lb.

Exchange.—Document Bills, 6 months' sight, 1s 1 7-16d.

Freight.—Steamer £1-15-0 per ton of 50 c. ft.

EXPORT OF TEA FROM CHINA AND JAPAN TO THE UNITED KINGDOM.

Export 2 Million lb. less than Last Year's.

China Coast, Aug. 20.

The Exports of Tea up to date from China and Japan to the United Kingdom amount to 24 million lb., as compared with about 26 million lb. up to same date last year, 38 million lb. in 1893, and 24 million lb. in 1892.

Confidence in Ceylon Plantation Property.—We learn that an absent proprietor of long business connection with the East and acquaintance with the ups and downs of plantation property, so values his Ceylon plantation that, on being lately approached with reference to a sale, he intimated that nothing less than *sixteen* years' purchase on his present annual profits would tempt him. This is certainly an indication of confidence on the part of a London man of business in the future of tea. Seven to ten years' purchase is usually considered enough for the tropics.

COLOMBO PRICE CURRENT.

(Furnished by the Chamber of Commerce).

Colombo, Sept. 2. 1895.

EXCHANGE ON LONDON, CLOSING RATES, on 6th Aug. *Bank Selling Rates:*—On demand 1/1 5-16 to 11-32: 4 months' sight 1/1 11-32 to ⅜; 6 months' sight 1/1⅜ to 13-32. *Bank Buying Rates*:—Credits 3 months' sight 1/1 15-32 to ½; 6 months' sight 1/1½ to 17-32; Docts. 3 months' sight 1/1¼ to 7-32; 6 months sight 1/1 17-32 to 9-16.

COFFEE.—Plantation Estate Parchment on the spot per bushel, R16·00 to 17·00.—nominal. Estate Crops in Parchment, delivery per bushel,—no quot., Plantation Estate Coffee, f.o.b. on the spot per cwt, R83 to 86,—nominal. Plantation Estate Coffee f.o.b. Special Assortment per cwt,—no quot., Liberian parchment on the spot per bushel, R12·50. Garden and Chetty Pachment on the spot per bushel, R15·50. Garden and Chetty Coffee f.o.b. per cwt,—no quot., Native Coffee f.o.b. per cwt, R73,—Scarce.

TEA.—Average Prices ruling during the week: Broken Pekoe, per lb 67c. Pekoe per lb 50c. Pekoe Souchong, per lb 43c. Broken mixed and Dust, per lb 32c.—Averages of Wednesday's sale.

CINCHONA BARK.—Per unit of Sulphate of Quinine per lb 01½c. to 2c.—1 to 4 %. Twigs and Branch.—No quotations.

CARDAMOMS.—per lb 80c. to R1·75.

COCONUT OIL.—Mill oil per cwt, R15·50 to 15·75. Dealer's oil per cwt, R15·25 to 15·62½. Coconut oil in ordinary packages f.o.b. per ton, R347·50.

COCOA.—(Unpicked & undried) per cwt, R35 to R45.

COPRA.—Per candy of 560 lb R38·00 to R49·00.

COCONUT CAKE.—(Poonac) f.o.b. per ton, R45 to 55.

COIR YARN.—Nos. 1 to 8 per cwt, R6 to 15.

CINNAMON.—Nos. 1 and 2 only per lb 68c.—nominal. Ordinary Assortment, per lb 65c.—nominal.

PLUMBAGO.—Large Lumps per ton, R150 to 330. Ordinary Lumps per ton, R130 to 290. Chips per ton, R80 to 150. Dust per ton, R30 to 100.

EBONY.—Per ton, no quotations.

RICE.—Soolye per bag, R7·10 to R8·00.
Pegu and Calcutta Calunda per bag R7.50 to R7·85.
Coast Calunda per bushel, R3·06 to R3·25.
Muttusamba per bushel, R3·30 to R3·65.
Kadappa and Kuruwe per bushel,—No quotations.
Rangoon Raw 3 bushel, bag, R10·50.

FREIGHTS.

Cargo.	Per ton London per str.	N. York per str.	Trieste per str.	Mar'lles per str.	Hamb', Bremen &c.
	s. d.	s. d.	s. d.	R. c.	s. d.
Tea	20/	..	25/	25	20/
Coconut Oil	20/	..	25/	25	20/
Plumbago	17/6	..	25/	25	20/
Coconuts in bags	20/	..	25/	25	20/
Other Cargo	20/	..	25/	25	20/
Broken Stowage	10/	..	25/	25	20/
SAILERS.					
Coconut Oil	..	35/	..	..	..
Plumbago	..	35/	..	..	..

New York rates per steamer with transhipment 12/6 @ 15/ above London rates.

LOCAL MARKET.

By Mr. A. M. Chittambalam, 7, Baillie St., Fort.

Colombo, Aug. 28th. 1895.

Garden Parchment :—	R15·00 to 15·25	per bushel
Chetty do :—	15·50 to 16·00	do
Native Coffee :—	65·00 to 66·00	per cwt
do f.o.b. :—	72·00 to 73·00	do
Liberian Parchment,	13·00 per bushel (nominal)	
do Coffee,	67·00 per cwt	
CARDAMOMS.—	0·70 to 2·00 per lb (nominal)	
COCOA.—(nominal)	30·00 to 40·00 per cwt do	
RICE.—Market is steady :—		
Kazla	R6·75 to 6·87	per bag
Soolye	7·00 to 7·50	do
Callunda	7·00 to 7·37	
Coast Callunda	2·85 to 3·00	per bushel
Kuruve (Scarce)		
Muttusamba	3·15 to 3·40	do

CINNAMON.—Quoted Nos. 1 to 4, at 54c and Nos. 1 and 2 at 58 cents per lb (nominal)

CHIPS.—R55·00 per candy (nominal)

COCONUTS.—Ordinary	R35·00 to 38·00 per 1,000 (nominal)	
do Selected	42·00 to 45·00 do	do
COCONUT OIL.—	15·37 to 15·50 per cwt	do
COPRA.—Market steady :—		
Kalpitiya	R47·00 to 47·50	per candy
Marawila	46·00 to 46·50	do
Cart Copra	40·00 to 44·00	do
POONAC.—Gingelly	87·50 to 90·00	per ton
Chekku	75·00 to 80·00	do
Mill (retail)	50·00 to 55·00	do
EBONY.—quotations at	R100 to R185 (nominal)	
SATINWOOD.—cubic feet	1·50 to 2·12	do
HALMILLA.— do	1·00 to 1·25	do
KITUL FIBRE.—Quoted at R30·00 per cwt (nominal)		
PALMYRA FIBRE.—Quoted nominally :—No buyers		
Jaffna Black.—Cleaned	R15·00 to 17·00	per cwt
do Mixed	10·00 to 13·00	do
Indian do	7·00 to 9·00	do
Do Cleaned	10·00 to 14·00	
SAPAN WOOD.—Quoted	65·00 to 70·00	per ton
KEROSINE OIL—American	7·00 to 7·12	Per case
do Russian	6·50 to 6·62	Per case
KAPOK.—Cleaned f.o.b :—	26·00 to 27·50	(nominal)
do Uncleaned	5·00 to 5·50	do
Croton Seed	13·00 to 17 00	do
Nux.Vnomica	2·50 to 3·00	per cwt

CEYLON EXPORTS AND DISTRIBUTION 1895.

COUNTRIES.	Coffee cwt. Plan-tation	Coffee cwt. N'tive	Coffee cwt. Total.	Cinchona. 1895 B'nch & Trunk lb	Tea 1895 lb.	Cocoa cwt	C'moms lb.	Cinnamon. Bales lb.	Cinnamon. Chips lb.	Coconut Oil. 1895 cwt.	Coconut Oil. 1894 cwt.	P'bgo 1895 cwt.
To United Kingdom ..	37714	36	37750	450892	60117221	19075	150854	688755	221666	77185	144917	67955
,, Austria	3155	100	3255	..	2473	100	..	1000	5600	12281	15918	..
,, Belgium	25	..	25	90728	8113	917	..	27100	22100	3204	9401	7432
,, France	614	956	1570	7900	30897	373	..	6500	2800	..	483	228
,, Germany	649	..	649	..	176738	637	37642	193215	143640	10741	21553	26593
,, Holland	..	..	..	20474	10781	..	..	..	..	..	..	4069
,, Italy	..	..	..	21647	4973	50	..	99500	40880	401	5533	..
,, Russia	152	..	152	..	179289	..	..	..	..	..	1902	..
,, Spain	..	..	..	..	38775	45	..	111000	1120	..	99	..
,, Sweden	..	..	..	..	750	..	..	..	..	..	..	..
,, Turkey	..	..	..	..	7367	..	..	..	..	..	..	..
,, India	468	1072	1540	..	617378	2	55416	1100	50	3708	20840	313
,, Australia	5694	631	6325	..	6246537	52	112	4100	12192	1318	2595	663
,, America	686	..	686	136501	241501	741	5772	30000	22400	96445	76813	82365
,, Africa	..	..	..	..	77553	..	..	..	..	..	..	..
,, China	80	..	80	..	185610	33	1049	45000	..	474	1705	..
,, Singapore	1	..	1	..	21492	..	..	..	..	8405	3709	..
,, Mauritius	367	802	1169	896	109703	..	..	..	..	..	..	..
,, Malta	..	..	..	..	45595	..	..	..	..	..	..	..
Total exports from 1st Jan. to 2nd September 1895	49605	3597	53202	729038	68122746	22025	250845	1196170	472448	214162		190421
do 1894	20895	587	21482	2102627	60430305	15746	205090	1075001	350671	305468		213962
do 1893	41948	1775	43723	2867214	56650918	24561	244486	1015567	340478	220280		261649
do 1892	34112	2030	36142	4471895	52572985	14633	249885	1278517	347351	343771		291195

MARKET RATES FOR OLD AND NEW PRODUCTS.

(From S. Figgis & Co.'s Fortnightly Price Current, London, 31st July, 1895.)

EAST INDIA. Bombay, Ceylon, Madras Coast and Zanzibar.	QUALITY.	QUOTATIONS.
ALOES, Socotrine	Good and fine dry liver...	£3 10s a £5
Zanzibar & Hepatic	Common and good ...	30s a 80s
BARK, CINCHONA Crown	Ledgeriana chips ...	2d a $3\frac{1}{2}$d
	Original stem	$1\frac{1}{2}$d a 3d
...	Renewed	2d a $4\frac{1}{2}$d
	Chips	$1\frac{1}{4}$d a 2d
BEES' WAX, White ...	Sli. sof. to gd. hard brig.	£7 10s a £8
Yellow ...	Dark to fair	£6 a £7
Mauritius & Madagascar..	Fair to fine	£6 12s 6d a £7 5s
CARDAMOMS—		
Allepee	Fair to fine clipped ...	1s a 2s 6d
Mangalore	Bold, bright, fair to fine...	1s 10d a 2s 8d
Malabar	Clipped, bold, bright fine	1s 8d a 2s 3d
Ceylon	Middling, stalky & lean	1s 3d a 1s 6d
Tellicherry	Good to fine	1s 6d a 1s 8d
	Brown sh	9d a 1s 4d
Mysore	Fair to fine pmp. clpd.	1s 9d a 4s
	,, ,, small ...	1s 2d a 1s 5d
Long Ceylon ...	Shelly to good	1s 1d a 2s 11d
	Seeds ...	1s 11d a 2s 1d
CASTOR OIL, 1sts	White	$2\frac{3}{4}$d a 3d
2nds	Fair and good pale ...	$2\frac{1}{4}$d a $2\frac{1}{2}$d
CHILLIES, Zanzibar ...	Fair to fine bright ..	27s a 30s
	Ord'y. and middling ...	24s a 27s
CINNAMON, 1sts	Ord'y. to fine quill ...	$8\frac{1}{2}$d a 1s 4d
2nds	,, ,, ,, ,, ...	$8\frac{1}{4}$d a 1s 3d
3rds	,, ,, ,, ,, ...	$7\frac{1}{2}$d a 1s
4ths & 5ths	Woody and hard ..	7d a 9d
Chips	Good ordinary ...	$2\frac{7}{8}$d
CLOVES, Zanzibar and Pemba.	Fair to fine bright ...	$2\frac{5}{8}$d a 3d
	Common dull and mixed	$2\frac{3}{8}$d a $2\frac{1}{2}$d
,, STEMS	Common to good ...	1d
COCULUS INDICUS ...	Fair sifted...	8s a 12s
COFFEE	Bold to fine bold colory	106s a 112s
	Midding to fine mid ...	97s 6d a 107s
	Low mid. and low grown	97s a 100s
COLOMBO ROOT... ...	Good to fine bright sound	10s a 20s
	Ordinary & middling ...	7s a 8s
CROTON SEEDS, sifted...	Ordinary to fine fresh ...	30s a 40s
CUTCH	Fair to fine dry ...	20s a 32s
DRAGONS BLOOD, Zan.	Ordinary to good drop ...	20s a 50s
GALLS, Bussorah & Turkey	Fair to fine dark blue ...	47s a 50s
	Good white and green ..	35s a 40s
GINGER, Calicut Cut A.	Good to fine bold ..	68s a 77s 6d
B & C	Small and medium ...	55s a 60s
Cochin Rough...	Common to fine bold ...	32s a 35s
,, ...	Small and D's ...	29s a 30s
Bengal Rough,	Fair to good ...	22s 6d a 25s
GUM AMMONIACUM ...	Blocky to fine clean ...	20s a 50s
ANIMI, washed ...	Picked fine pale in sorts	£9 a £11 10s
	Part yellow & mixed do.	£8 10s a £8 15s
	Bean & Pea size ditto ..	£4 a £7 10s
	Amber and red bold ..	£5 a £7
scraped...	Medium & bold sorts ...	£4 a £7
ARABIC E.I. & Aden...	Good to fine pale frosted sifted	40s a 42s 6d
	Sorts, dull red to fair ...	30s a 37s 6d
Ghatti ...	Good to fine pale selected	32s 6d a 45s
	Sorts middling to good	23s a 30s
Amrad cha.	Good and fine pale ...	35s a 45s
	Reddish to pale brown ...	25s a 32s
Madras ...	Dark to fine pale ...	20s a 33s 6d
ASSAFŒTIDA	Fair to fine pinky block... and drop	50s a 100s
	Ordinary stony to midling	20s a 45s
KINO	Fair to fine bright ..	£25 a £30
MYRRH, picked	Fair to fine pale ...	£5 a £7
Aden sorts	Middling to good ..	65s a 75s
OLIBANUM, drop...	Fair to fine white ...	30s a 55s
,,	Reddish to middling ...	17s a 25s
pickings...	Middling to good pale ...	8s a 14s
siftings ..	Slightly foul to fine ..	9s a 13s
INDIARUBBER	Red hard clean ball ...	2s 1d a 2s 5d
East African Ports, Zanzibar and Mozambique Coast	White softish ditto ...	1s 8d a 2s 2d
	Unripe root	10d a 1s 4d
	Liver and Lamu Ball ...	1s 8d a 2s $2\frac{1}{2}$d
	Sausage, ordinary to fine	1s 3d a 2s
	" without sticks	2s 2d a 2s 5d
Assam	Good to fine ...	1s 7d a 2s
	Common foul & middling	9d a 1s 5d
Rangoon	Fair to good clean ...	1s 6d a 2s 2d
Madagascar, Tamatave, Majunga and Nossibe	Good to fine pinky & white	2s 1d a 2s 5d
	Fair to good black ...	1s 6d a 1s 9d
ISINGLASS or FISH MAWS Tongue.	good to fine pale ...	1s 8d a 2s 6d
	dark to fair ...	9d a 1s 4d
Bladder Pipe	Clean thin to fine bold...	1s 6d a 2s 6d
Purse...	Dark mixed to fine pale...	5d a 1s 2d

EAST INDIA *Continued* East Coast Africa, Malabar and Madras Coast, Bengal.	QUALITY.	QUOTATIONS.
Kurrachee Leaf ...	Good and fine pale	2s 1d a 3s
	Red part thin ..	1s 2d a 1s 11d
INDIGO Bengal	Middling to fine violet...	4s 8d a 5s 6d
	Ordinary to middling ...	3s 3d a 4s 6d
Kurpah	Fair to good reddish violet	2s 10d a 3s 6d
	Ordinary and middling	1s 10d a 2s 8d
Madras (Dry Leaf).	Middling to good ...	1s 8d a 3s
	Low to ordinary ...	7d a 1s 5d
IVORY—Elephants' Teeth—		
60 lb & upwards ...	Soft sound	£59 a £66
over 30 & under 60 lb.	,, ,,	£48 10s a £61
60 a 100 lb. ...	Hard ,, ,,	£35 a £42
Scrivelloes	Soft ,, close & wide	£22 a £35 10s
Billiard Ball Pieces $2\frac{3}{4}$ a $3\frac{1}{4}$ in	Sound soft	£80 a £97
Bagatelle Points ...	Sli. def. to fine sound soft	£51 a £63
Cut Points for Balls ...	Shaky to fine solid sd. sft	£65 a £78
Mixed Points & Tips...	Defective, part hard ...	£33 a £44
Cut Hollows	Thin to thick to sd. sft	£25 a £41
Sea Horse Teeth— ... $\frac{3}{4}$ a $1\frac{1}{4}$ lb.	Straight crked part close	1s a 3s 6d
MYRABOLANES, Bombay	Bhimlies I, good & fine pale	7s 9d
	,, II, fair pickings	3s 6d a 4s 3d
	Jubblepore I, good & fine pale	5s a 7s
	,, II, fair rejections	3s 6d a 4s
	Vingorlas. good and fine	4s a 5s 6d
Madras, Upper Godavery	Good to fine picked ...	5s 6d a 6s 6d
,, ,, ..	Common to middling ...	3s 3d a 4s 6d
Coast	Fair	4s 4d a 4s 6d
Pickings ...	Burnt and defective ...	3s 3d a 4s 6d
MACE, Bombay ...	Dark to good bold pale ..	1s 6d a 2s
	W'd com. dark to fine bold	4d a 6d
NUTMEGS, ,, ...	65's a 81's	2s 3d a 3s 2d
	90's a 125's	1s 5d a 2s 1d
NUX VOMICA	Fair to good bold fresh	6s a 9s
OIL, CINNAMON ...	Good heavy .. .	3d a 1s 6d
CITRONELLE ...	Bright & good flavour...	$\frac{7}{8}$d a 1d
LEMONGRASS ...	,, ,, ,, ...	$1\frac{3}{8}$d
ORCHELLA WEED Ceylon ...	Mid. to fine, not woody	11s a 15s
Zanzibar	Picked clean flat leaf ...	12s a 18s
Mozambique	,, wiry	22s a 32s
PEPPER—		
Malabar, Black sifted ...	Fair to bold heavy	$2\frac{3}{8}$d a $2\frac{1}{2}$d
Alleppee & Cochin ..	,, good ,, ...	
Tellicherry, Black ...	,, ,, ..	
PLUMBAGO, Lump ...	Fair to fine bright bold	15s a 16s
	Middling to good small	10s a 13s
Chips ...	Dull to fine bright	1s 6s a 8s 6d
Dust ...	Ordinary to fine bright...	2s a 6s
RED WOOD	Fair and fine bold ...	£3 10s a £4
SAFFLOWER, Bengal	Good to fine pinky nominal	95s a 100s
	Ordinary to fair ...	70s a 80s
	Inferior and pickings ...	30s a 50s
SANDAL WOOD, Logs ..	Fair to good flavour ...	£30 a £50
,, ,, Chips..	Inferior to fine .	£4 a £8
SEEDLAC	Ordinary to fine bright	50s a 100s
SENNA, Tinnevelly ...	Good to fine bold green	6d a 8d
	Fair middling medium	3d a $5\frac{1}{2}$d
	Common dark and small	$\frac{1}{2}$d a $2\frac{1}{2}$d
Bombay ...	Ordinary to good ...	1d a 2d
SHELLS, M.-o'-P. ...	EGYPTIAN—bold clean ..	50s a 55s
	medium thin and stout	70s a 77s 6d
	chicken, part oysters	55s 6d a 77s 6d
large	BOMBAY—poor to fine thic	60s a 67s 6d
medium part stout	clean part good color	75s a 87s 6d
chicken part stout	,, ,, ,,	80s a 85s
oyster & broken pcs	,, ,, ,,	77s 6d a 82s 6d
Mussel	medium and bold sorts	40s a 50s
	small and medium sorts	18s a 34s
Lingah Ceylon ...	Thin and good stout sorts	1s a 24s
TAMARINDS	Mid. to fine black not stony	9s a 11s
	Stony and inferior ...	4s a 6s
TORTOISE-SHELL ...	Sorts. good mottle, heavy	26s a 34s
Zanzibar and Bombay	Pickings thin to heavy...	9s 6d a 21s 6d
TURMERIC, Bengal ...	Leanish to fine plump finger ...	9s 6d a 11s 6d
Madras ...	Fin. fair to fine bold brgt	8s 6d a 12s 6d
,, ...	Mixed middling	10s
,, ...	Bulbs	9s 9d a 10s
Cochin ...	Finger	8s 3d a 11s
VANILLOES,		
Bourbon, 1sts ...	Fine, cryst'ed 5 to 9 in.	16s a 25s
Mauritius, 2nds...	Foxy & reddish 5 to 8 in.	12s a 18s
Seychelles, 3rds...	Lean & dry to mid. under 6 in. ...	7s a 10s
Madagascar, 4ths...	Low, foxy, inferior and pickings	5s a 7s

THE

AGRICULTURAL MAGAZINE,

COLOMBO.

Added as a Supplement Monthly to the "TROPICAL AGRICULTURIST."

The following pages include the Contents of the *Agricultural Magazine* for September :—

Vol. VII.] SEPTEMBER, 1895. [No. 3.

GRAPE CULTIVATION IN CEYLON.

THE cultivation of the grape has been the subject of a number of communications which have from time to time appeared in the pages of this Magazine. Mr. E. T. Hoole in particular has written much on the subject, in which he has evinced peculiar interest, no doubt having first had his attention drawn to the possibility of extending grape culture in Ceylon by his long experience of the industry in Jaffna. In a late number, this correspondent contributed a most interesting account of the cultivation of grapes in North-West Inda, and commended the system there adopted to the notice of cultivators in at Ceylon. Not long after the publication of this account we had a visit from Mr. Zanetti, with whom arrangements were subsequently made for carrying on an experiment in grape culture on the grounds of the School of Agriculture at Colombo. Mr. Zanetti is an expert in this branch of agriculture, of which he has had long and intimate experience of an extensive nature both on the Continent and in Australia. Hitherto grapes have been cultivated to a very limited extent in Ceylon, the Jaffna peninsula being the locality where the largest number of vines occur. But as far as we are aware no single grape grower in Ceylon possesses more than a couple of plants in his garden, and these have been grown as spreading vines on bowers or pandals. The continental method which is now being adopted wherever viticulture is an established agricultural industry has, we believe, never before been attempted in Ceylon, and its demonstration will be one of the features of the experiment at the School of Agriculture, where, moreover, the most approved systems of pruning, manuring &c. will be practised. Some criticism has been raised by the choice of Colombo for the experiment, as it is thought that the climate is too humid for the grape. Single vines have however been known to flourish in nearly every part of Ceylon, and it will remain to be seen whether given a suitable soil, selected varieties, and expert-treatment, a vineyard cannot be established in the metropolis. We believe, however, that Mr. Zanetti does not intend to limit his experiment to Colombo. Personally it is a source of great gratification to us that an opportunity has been afforded for the carrying out of so desirable an experiment, which we can only hope will prove an unqualified success. We have already had many communications on the subject of the experiment, and some of our correspondents have given us their own experiences of vine culture.

LAWS OF CEYLON RELATING TO AGRICULTURE.

CHAPTER IX.

Recovery of Money due under this Ordinance.

1. If default be made in the payment of any instalment, charge or rate under this Ordinance in repayment of any amount expended on the construction &c. of any irrigation work, it shall be lawful for the Government Agent or any person authorized by writing under his hand to seize the land herein declared specially bound and liable or any movables thereon to whomsoever such land crop or moveables may belong, and to sell the same by public auction at any time not less than twenty-one days from the date of seizure.

2. If default be made in the payment of any other sum payable under this Ordinance it shall be lawful for the Government Agent or any person authorized in writing under his hands to seize any property belonging to the defaulter, wheresoever the same may be found, and to sell the same by public auction at any time not less than twenty-one days from the date of seizure. Provided that no seizure of any land be made if the defaulter surrenders free and unclaimed movable property to satisfy the total amount of the debt. Provided also

that no land seized under section 1 be sold until and unless the crop or produce thereof and the movables thereon, if any, shall have been first sold.

3. The sale of immovable property shall be carried on the spot unless the Government Agent shall otherwise direct, or unless the defaulter shall consent to the sale being conducted elsewhere.

4. The person making the seizure may, if so authorized by the Government Agent, keep a person in possession of the property seized.

5. It shall be lawful for the Government Agent or any person authorized by him as aforesaid to demand, take and receive from such defaulter the several sums of money mentioned as follows :—

(*a*) In cost of proceeding to seize property—a charge not exceeding 50 cents for every R10 due.

(*b*) For keeping a person in possession—a charge not exceeding 50 cents per day.

(*c*) For the expenses of sale—a charge not exceeding 25 cents for every ten rupees of the net proceeds of the sale.

6. After deducting the amount and costs due, the overplus, if any, shall be paid to the owner or joint owners of the property sold.

7. A certificate of sale signed by the Government Agent is sufficient to vest the property in the purchaser. Such certificate is liable to stamp duty fixed on conveyances of immovable property and to any registration or other charges authorized by law, such duty and charges being payable by the purchaser.

H. A. J.

LABOUR.

A season of unwonted prosperity has set in in many planting districts for the Sinhalese agricultural classes, owing to the want of Tamil labour felt on the plantations, and entire families are leaving their homesteads for residence in close proximity to European plantations. The system of weekly payments if not insisted upon has still become imperative, as the tide of labour generally sets in the direction of prompt settlement and from R1·50 to R1·80 per week is easily earned by an adult male, while a woman or child earns from R1·25 to R1·50 on an average. And thus the Sinhalese ryot who had hitherto to depend entirely on his paddy fields for the support of himself and his family has practically averted the calamity of starving during bad seasons of *maha* and *yala*. The Government have also thus been relieved of the anxiety of having occasionally to provide villages with relief works.

News comes from the coast of India that the recruiting grounds of our Immigrant labour supply are being largely tapped by Singapore planters, who are offering more advantageous terms than the Ceylon planters do. If our labourers went gradually away from Ceylon to their old *Dores* in other parts, and also to others following their example, and if capital coming to Ceylon is also driven away to countries where land can be got on more advantageous terms, Ceylon need be in no fear of an over-production of tea. But the Surveyor-General may fail to control the deliveries at Mincing Lane.

The general effect of tea planting, although largely beneficial to the neighbouring villages, is by no means an unmixed blessing to the younger generation as it is reported from the Sabaragamuwa Province that the attendance at the village schools have been greatly affected by the children being taken away to the neighbouring tea estates for gathering leaf. It may not be felt just yet, but it is the opinion of many reflecting minds that the suppression of crime among the Sinhalese villagers can be best attained by taking them in hand when young and teaching discripline and morality as in European countries. The school has ever been the nursery of the Church, and even if we did not carry the Christian's propaganda into the Buddhist villages, still Christian school masters who have oversight of the boys during school hours, can do an immense amount of good in watching their conduct generally and training them to love rectitude and truth and to control their natural impulses. To take a man whose character has been moulded and fixed and to fine scourge and imprision may satisfy the vindictive requirements of justice, but results have proved that it has neither cured the offendor nor operated as a deterrent to others of his class. It is possible that compulsory education and the establishment of normal schools all over Ceylon may do more to suppress crime by training the Sinhalese youth while young than the increased rigorous treatment in jails will do after the criminal has been made by the general neglect of his moral education in his early years.

P.

PALMYRAH PALM PRODUCTS.

Mr. C. E. Collyer, the fibre referee for the Imperial Institute, reports as follows on samples of Palmyrah fibre :—

"The stiff fibre extracted from the base or sheath of the leaf-stalk, when in mature condition, of dark colour, and tough and supple in quality, is in considerable favour as a broom and brush making material, and has rapidly become one of the best substitutes for Bahia Piassava, notwithstanding a tendency to curl in warm and dry weather.

The consumption has kept pace with the supply, and its use could be largely increased if sufficient quantities could be obtained at moderate prices, of which according to the available information there is much doubt.

The light-coloured fibre extracted from the leaf-stalk itself is of a different character, and is at present of comparatively small value:—its want of life, toughness, and strength to recover its straightness after being bent, limit its use to common mixing purposes, and it is considered inferior to African Piassava for the lowest uses. It is possible a better and more extensive use for this fibre may ultimately be found, but in the meantime shipments would come to a very doubtful market."

The wood forms a valuable rafter for houses Toddy is got by fementation from the sweet juice of the flower, as with the cocoanut and kitul palms. Sugar (jaggery) is made from the unfermented juice. Fans are constructed of the young leaves, which in the very young stage are also woven into braids and thus exported. Baskets, hats and other articles are also made of the leaves, which have also from time immemorial served the purposes of writing paper. The soft pulp inside the shell or stone of the fruit is eaten raw, or

hardened into thin slabs by the mixture of a little lime, on fried into cakes after being mixed with flower, sugar, and coconut scrapings. The cabbage or terminal bud is also eaten. The seedlings are sometimes eaten cooked as a vegetable or made into pickles, while the germinating embryo within the stone is considered a delicacy and is sometimes reduced to a flour.

Mr. J. W. Mollison, Officiating Director, Department of Agriculture, Bombay, supplies some information with reference to the uses of the tender root which the seeds send down at the time of germinating :—The palmyran fruit contains two or three kernels, and if these are to be eaten raw, the fruit has to be plucked before it is ripe. In this condition they are sold in N. W. India at 12 for one anna when good or say 6 fruits per anna. Fallen fruits only are used for planting in order to get the radicle to be used as a vegetable. These radicles are from 9 to 12 inches long and 1 to 1½ in. diameter at the thick end. The seedlings are grown as crowded as possible in the nursery, and are ready for digging in about four months. The vegetable is generally roasted before it is offered for sale, at the rate of 16 for an anna. Its cultivation in the Bombay Presidency, says Mr. Mollison, is important, because of the enormous value of outturn per acre, and because it might be economically imitated elsewhere in India. Nurseries, however, are seldom larger than $\frac{1}{20}$ to $\frac{1}{10}$ of an acre. In a nursery about 50 fruits are planted in a square yard, and these may produce 100 or more young tap roots. The gross value of yield per anna at ordinary market rates is R1,800, but if the vegetable is dear, the outturn per acre may be worth R300.

DAIRY PRODUCE.

The native cow as most of us are aware is a very poor milker. In fact, a Ceylon cow's average yield of milk per day is hardly over three to four pints.. In many instances the cows are never milked. The coast cows (animals of South Indian breeds) which are being imported to the Island yield on an average six to eight pints of milk a day, and those of the better Indian breeds, notably the Sind breed, which has been introduced to the Island through the Government Dairy Farm, yield on a average from twelve to sixteen pints daily. Dr: Parkes in his Manual of Hygiene, puts down the average of an English cow to be 20 to 25 pints daily and occasionally up to 50 pints. Thus it is seen that the milk yield of different breeds of cows varies greatly. It has also to be noted that milk differs in quantity and quality in different animals under different conditions, for instance, the age of a cow, the number of calves produced by it, the age of the calf, and the system of feeding the cow, has much to do with these variations.

The ridiculously small quantity of milk yielded by native cows, is undoubtedly due to neglect on the part of breeders for ages past, the native cow in the villages being considered not so much a milker,but a producer of calves, which when grown up are used either for agricultural work or draught purposes, such as for the conveyance of loads or for trotting. Again, the villager requires an animal to plough his fields, and any small sized animal will do the work with the native implement. Such is the demand, and hence the supply keeps pace with it. As regards dairy produce, though in India milk and ghee are highly prized and often indispensable articles of diet, milk is seldom an article of diet in the villages here, and it is when used considered more or less a luxury. Ghee again is mostly used in medicine, and coconut milk is often considered a cheap and easily obtained substitute for it, whereas in India a native would be shocked to hear of the substitution of coconut milk for ghee, for he cannot conceive how one could be satisfied without the use of such an indispensable article. The only form in which milk is used in the villages is in the form of curds, and even for the production of this cattle owners have not sufficient encouragement, as there is no regular demand for the article. It is used generally on special occasions (feasts, &c.), but the curd obtained from cow's milk is considered to be inferior to that obtained from buffaloe's milk. These remarks do not apply to the villages in the vicinity of towns, for in towns on account of the different classes of inhabitants and their different tastes, there is always a demand for milk, and the villager is ever ready to meet it, and obtain the advantages of profit thus offered him.

It is no surprise that in the light of the above facts that dairying has not been an industry among the Sinhalese villages, and a good milking cow is a rarity among them.

In India the native consumes the produce of the dairy in a variety of forms. First and foremost, the ghee or clarified butter is an indispensable article in the preparation of his daily food. *Tæk* a bye-product of ghee-making is never wasted ; *mawa* or *khowa*, a sort of dessicated milk is largely used by them ; and lastly, curd is also a favourite with them.

In places where milk is turned into butter and cheese, and the bye-product obtained in the process of butter making, skimmed milk is also put to a variety of uses.

The conditions prevailing in Ceylon are such, that dairying as an industry will be more readily adopted in the vicinity of towns rather than in the villages.

In towns there is always a demand not only for pure milk but for its products. A large quantity of butter is annually imported to the island, and with all that, the consumers always prefer fresh butter, and are prepared to pay enhanced prices for the article they prefer. Dairy-farming in villages close to towns should prove a paying industry. When milk could be sold in a fresh state, there is not much difficulty in carrying on the trade profitably, but as it is doubtful when a large number of persons engage in the production of the article that there will be an equally large demand for fresh milk, itis essential that attention should be paid to the manufacture of butter.

A central factory where a cream seperator could be worked, and where all the milk in the district could be disposed of, would be the best inducement for the villager to pay attention to this important industry. Under such circumstances, when they are assured of a ready market the inducement will be sufficient for them. A central factory need not cost much ; a Baby Laval can be had for less than R250, and

a few more appliances such as cans, jars, churns &c. would meet all the requirements.

As an instance it may be mentioned that the experiments conducted in the Bombay Presidency and the North-Western provinces of India some few years back have given such an impetus to the industry, that at present there are over fifty or sixty small butter factories in the Bombay Presidency alone where cream seperators are used with the greatest advantage. These factories have become central stations, where the out-put of milk in the adjoining villages is readily purchased. Bombay butter now not only meets the demand of the Presidency to a great extent, but as we are aware is obtainable even in many of the Colombo stores.

It has to be noted in this connection, that for the manufacture of butter the cost of fresh milk will have to be comparatively cheap, but if the price obtainable leaves a margin of profit to the owner of the cows, there is no reason to fear any possibility of failing in obtaining a proper supply of milk for the purpose of butter making.

The experiments at the Poona Dairy farm have shewn that 74 lbs. of cow's milk gave 3 lbs. 6¼ oz. butter or 1 lb. butter from 21·72 lbs. milk. Again, 43 lbs. of buffaloe milk gave 3 lbs. 10 oz. butter or 1 of butter to 14·29 of milk.

Thus it is seen that buffaloe milk yields a much larger percentage of butter than cows' milk, and there is no reason why buffaloe milk should not be put to this use here.

The following analysis of cow's milk (Sind) and buffaloe's milk, at the Poona Dairy Farm is also very suggestive:—

	Cows.	Buffaloe.
Water	85·53	82·13
Butter fat... ...	5·43	7·73
Casein	2·95	4·03
Milk sugar ...	5·40	5·31
Mineral matter ..	·69	·80
	100·00	100·00

W. A. D. S.

BLACK SMUT ON ORANGE TREES.

We have been sent some branches of an orange tree affected with black smut, with a request to suggest a remedy.

The fungus we may at once state is only a secondary disease dependent on a scale insect (probably a *lecanium*), and we advise that the ordinary treatment against scale insects should be at once adopted.

Make a solution (by boiling) of ½ lb. of hard soap or 2 quarts of soft soap to a gallon of water. Cut the hard soap previous to boiling in thin slices to assist solution. To every gallon of boiling soap solution (off the fire) add 2 gallons of kerosine. Then churn the mixture violently with a force pump or garden syringe, driving it backwards and forwards through the nozzle, keeping the latter always below the surface during the process. By this means an emulsion will be formed, which, if perfect, should be of the consistency of cream, and the oil should not separate out, even if the emulsion be kept standing for days, and it should mix freely with water in any proportion. This, when required, should be mixed with no less then nine times its bulk of water, which, if used warm, will facilitate dilution in the event of the emulsion having become lumpy. This should be applied to the trees in as fine a spray as possible with the help of a suitable apparatus (such as the Vermorel "Knapsack,' sprayer, or the Antipest sprayer).

All parts of the tree should be wetted, and the treatment should be repeated at intervals as necessary, as there are times and seasons when the treatment will be all ended with much better results than at others. In addition, the trunk and larger limbs of the tree may be advantageously painted over (by means of a paint or white-wash brush) with the following:—Flowers of sulphur, 4 lb; soft soap and water, 6 gallons; or with "Parker's remedy" which is made up thus: a thin flour-and-sulphur paste containing three parts by weight of sulphur to every one of flour, the paste to be made by boiling in the ordinary way, and the sulphur to be stirred in while the latter is still hot.

ABORTION IN COWS.

We take the following from the *New South Wales Agricultural Gazette*:—In a paragraph on this subject which appeared in our February issue, it was stated that no preventive measures had ever been found to be of the slightest avail. Owing to this statement, Mr. E. R. Dean, of Goulburn, has written to the Department, pointing out that some of the American agricultural journals speak with much confidence of the great value of *Viburnum prunifolium* as a preventive of abortion. He mentions that Dr. Phares, speaking of the action of *viburnum*, says:—"It is a preventive in habitual miscarriages. It prevents miscarriage from any cause. It has never failed to prevent a threatened abortion so far as I can learn." And the *American Veterinary Review* endorsed this as follows:—"We simply add this is literally true, and confirmed by the thousands of cases since treated all over the United States and in other countries. No other medicine, perhaps, ever came so soon into general use and met with so unanimous a verdict of approval among the medical fraternity. This wonderful medicine is found native in the forests of most of the States between the Gulf of Mexico and the Northern Lakes, and is generally known by the trivial name of 'black-haw.' The bark of the root is used for making a tincture; or in emergency the decoction of fresh bark serves well. * * * If properly prepared and administered it is worth, for the purpose mentioned, more than all other medicines." Mr. Dean adds:—"Dose for a human being:—

Infusion	½ oz.	Four or five times a day.
Tincture	1 drachm	
Powder	1 drachm	

Therefore say double or treble the quantity as a dose for a horse or cow."

(*Viburnum* is a genus belonging to the order *Caprifoliacæ*, and is represented in Ceylon by two distinct indigenous species—*V. coriaceum* and *V. erubescens*.)

GAMBOGE AND BENZOIN.

Gamboge is a gum resin yielded by the bark of *Garcinia morella* of Ceylon and South India, and *G. Hanburyi* of Siam, Cambodia and Cochin China. It is from these latter places that practi

cally the whole of the gamboge of commerce is obtained. It is said to be a powerful cathartic medicine, but its principal use is as a pigment in water-colour painting. It is also used to give colour to lacquer varnish, for brass work &c.

The following reference to the gamboge tree of Siam is from a report on the trade of Siam for 1893, extracts from which appear in June-July number of the *Kew Bulletin*: "The trees grow to a height of 50 feet, and are straight stems with no lower branches, owing probably to the dense shade of the forest in which they grow. Noue of those I saw had a diameter of more than 12 inches. Ten year's growth is said to be required before the tree is ready for tapping. This is carried on by the Cambodian and Siamese Islanders during the rainy months—from June to October—when the sap is vigorous, by cutting a spiral line round the trunk from a height of some 10 feet downwards to the grouud. Down these grooves the resin wells out of the bark and trickles in a viscous stream into hollow bamboos placed at the base of the tree, and from there it is decanted into smaller bamboos, where it is left for about a month to solidify. To remove the gamboge the bamboo is placed over a red-hot fire, and the bamboo husk cracking, there is left the article left as pipe gamboge. The trees can be tapped two or three times during the season . . . Care must be taken to prevent rainwater mixing with the resin in the grooves." The *Indian Agriculturist* of August 1st makes the following reference to gamboge:—

As to gamboge, so far as is known, two trees are to be met with in India which yield this drug. The *Garcinia pictoria* is fouud in the high mountain lands of the Wynaad, but attempts to cultivate it in the low country are said to have failed. A good kind of gamboge is extracted from this tree. The bark, according to Dr. Roxburgh, is spotted with many yellow specks, and contains considerable masses of gamboge inside. Samples sent to him he considered superior to most other kiuds. This tree is to be found in the greatest abundance along the whole line of the Ghâts, and its produce would in time become an important article of export. The seeds yield an oil which is not purgative, like the gamboge resin. It has been said on high authority that "it is probable this gamboge might advantageously be applied to any use to which the gamboge of Siam is habitually put." The other Indian tree which yields a substance like gamboge is the *Xanthochymus pictorius*. It bears fine yellow fruit, like an orange, which is eaten by the natives, who find it very palatable. The fruit, when full-grown, but not ripe, yields a quantity of yellow resinous acrid gum like gamboge, of the consistence of a rich cream.

Benzoin—known also as gum Benjamin in English commerce—is a green resin obtained from the bark of trees in Sumatra and Siam. Benzoin is used as a stimulant and expectorant in chronic bronchists, is one of the priucipal ingredients in Friar's Balsam, and is largely used for incense. White Sumatra benzoin is known to be yielded by *Styrax benzoin*, it is curious that the true character of the tree yielding Siam benzoin remains a mystery still, in spite of private and official efforts to to clear up the matter. A report on the trade of Siam of 1893, referring to gum Beujamin, states that the whole of the Bangkok export goes to the London market, and thence to France and Belgium to be manipulated into balsam, a small quantity being used locally for frankincense. Prices in 1893 are reported as bad, the first-class gum fetching about £165 per ton, the second-class about £40 per ton.

It is not generally known, remarks the *Indian Agriculturist*, that the *Terminalia angustifolia* is a tree which produces a variety of benzoin. It is obtained by wounding the tree, and is composed of large white and light brown pieces easily broken between the hands. When gently dried it forms a white powder formerly in great request as a cosmetic. It has a most agreeable smell. But the most striking ingredient of this resin is benzoic acid. In the churches in the Mauritius this be nzoin was formerly used as incense.

A NEW FRUIT TREE.

Under this heading the *Australian Tropicalturist* refers to a well-known Ceylon tree known by the native name of *kamaranga*, and incidently also makes mention of another fruit tree, common in gardens and much used as an acid in Eastern cookery, viz., the *biling*. Verily, we do not appreciate our Ceylon fruit sufficiently and it yet may happen that we will find ourselves purchasing tins of kamaranga and biling jam exported from the southern continent! The following is the notice referred to:—

For although known to experts for a number of years, the Averrhoa-Carambola may be classed as a new fruit tree, being almost unknown to the general public. We have tasted the fruit when ripe and when unripe. In its unripe state it is too sour aud unpalatable for any use we know of. In its ripe state—but it must be quite ripe—we think it very good indeed. It has the taste of a plum not quite ripe. The fruit we saw was exhibited by Messrs. L. Summerlin and Company, and came from the garden of Mr. W. H. Day, Kedron Brook. We thought this tree the only one in the district, but we have since discovered several others in the Acclimatisatiou Society's Gardens, Boweu Park, from whence Mr. Day received his plant some 16 years ago. The Acclimatisatiou Society introduced the Averrhoa-Carambola or bitter Averrhoa, and the sweet variety or Averrhoa-bilimba, from China, but it has never become a favourite, so has been almost neglected. There is a fine tree at Bundaberg and some others on the Daintree River. From the mere tasting of the ripe fruit we were of the belief that it would make good jam and jelly. Our opinion has been confirmed, as we have been informed that Mrs. Soutter has made jelly of the fruit this present seasou, which Mr. Soutter pronouuces to be "lovely," and "far before that of rosella." It would make splendidly into tarts. Its acidity, we believe, would act as a tonic and appetiser. The tree grows to a large size, some sixteen to twenty feet in height, and resembles the willow in form, the fruit hanging on long racimes which are drooped gracefully amongst the foliage. It yields all the year round and is always in bloom. The crop is said to be a heavy one. The fruit is oblong in shape, resembling in size and colour the sugar banana, but instead of being round like that well-known fruit, is ridged or furrowed with fine-pointed ribs running longi-

tudinally. We hope to see some notice taken of this really excellent fruit, as it has been too long in obscurity.

POULTRY DISEASES.

Roup generally attacks poultry after exposure to chilly winds and rain. It begins with a cold and is attended with offensive discharges from the mouth and eyes. The disease is highly contagious, and is conveyed by the saliva of sick birds falling into water or food to which the healthy have access. Separate utensils should therefore be used in feeding the sick. Affected birds should be kept warm and given a grain of pepper twice a day. Another good prescription is the following: The bark of murunga root (horse radish tree), garlic and ginger, pounded, and the juice administered twice a day. If the bowels are constipated a little gingelly oil may be given. Roup generally runs a rapid course, and requires prompt treatment.

Diarrhœa is caused by acidity of the stomach or a chill. Unripe bael fruit (*Ægle marmelos*) should be first roasted and a solution of the pulp, after filtering, given with a few drops of ginger. Poultry are sometimes killed by apoplexy which is generally the result of high feeding. It is seldom that anything can be done for the birds as they soon become unconscious. Relief may be given by opening the vein on the side of the neck (the jugular), and the head fomented with a mixture of vinegar and cold water.

It is a common experience for hens to lay soft eggs. This generally occurs with overfed poultry, and though sometimes caused by fright, is due to a deficiency of lime in the system. Bone dust should be strewn about the yard for the poultry to pick up.

For vermin on poultry, a mixture of powdered charcoal and sulphur should be rubbed over the body of the bird, and the poultry house cleansed and limewashed.

In damp or wet weather whenever fowls are found to be drooping or loose in the bowels, a small pill of mustard will be found beneficial, and help to ward off more serious complications.

A. M. FERNANDO.

ROYAL COMMISSION ON TUBERCULOSIS.

In concluding their *Report*, dated April 3, 1895, and signed by all the Commissioners, they say:—

"We have obtained ample evidence that food derived from tuberculous animals can produce tuberculosis in healthy animals. The proportion of animals contracting tuberculosis after experimental use of such food is different in one and another class of animals; both carnivora and herbivora are susceptible, and the proportion is high in pigs. In the absence of direct experiments on human subjects, we infer that man also can acquire tuberculosis by feeding upon materials derived from tuberculous food-animals.

"The actual amount of tuberculous disease among certain classes of food-animals is so large as to afford to man frequent occasions for contracting tuberculous disease through his food. As to the proportion of tuberculosis acquired by man through his food, or through other means, we can form no definite opinion, but we think it probable that an appreciable part of the tuberculosis that affects man is obtained through his food.

"The circumstances and conditions with regard to the tuberculosis in the food-animal which lead to the production of tuberculosis in man are, ultimately, the presence of active tuberculous matter in the food taken from the animal and consumed by the man in a raw or insufficiently cooked state.

"Tuberculous disease is observed most frequently in cattle and in swine. Is is found far more frequently in cattle (full grown) than in calves, and with much greater frequency in cows kept in town cowhouses than in cattle bred for the express purpose of slaughter. Tuberculous matter is but seldom found in the meat substance of the carcass; it is principally found in the organs, membranes, and glands. There is reason to believe that tuberculous matter, when present in meat sold to the public, is more commonly due to the contamination of the surface of the meat with material derived from other diseased parts than to disease of the meat itself. The same matter is found in the milk of cows when the udder has become invaded by tuberculous disease, and seldom or never when the udder is not diseased. Tuberculous matter in milk is exceptionally active in its operation upon animals fed either with the milk or with dairy produce derived from it. No doubt the largest part of the tuberculosis which man obtains through his food is by means of milk containing tuberculous matter.

"The recognition of tuberculous disease during the life of an animal is not wholly unattended with difficulty. Happily, however, it can, in most cases, be detected with certainty in the udders of milch cows.

"Provided every part that is the seat of tuberculous matter be avoided and destroyed, and provided care be taken to save from contamination by such matter the actual meat substance of a tuberculous animal, a great deal of meat from animals affected by tuberculosis may be eaten by the consumer.

Ordinary processes of cooking applied to meat which has got contaminated on its surface are probably sufficient to destroy the harmful quality. They would not avail to render wholesome any piece of meat that contained tuberculous matter in its deeper parts. In regard to milk, we are aware of the preference by English people for drinking cow's milk raw, a practice attended by danger, on account of possible contamination by pathogenic organisms. The boiling of milk, even for a moment, would probably be sufficient to remove the very dangerous quality of tuberculous milk."

CHEMICAL EXAMINATION OF CEYLON PLANTS.

Messrs. Hummel and Perkin of Yorkshire College, Leeds, have examined the *Toddalea aculeata* with a view to discovering the character of the colouring matter contained in it. The plant belongs to the order Rutaceæ and is locally known as Kudu-miris (S.) The root, about ¾ in. in diameter, possesses an aromatic odour; it is of a pale, yellowish colour, has a woody centre and a brown bark covered with a light, yellow, soft, powdery, pith-like substance.

Ten grammes of the external yellow powder were digested for two hours with 100 c.c. of

boiling alcohol, filtered, and the residue again treated in a similar manner. To the orange-brown filtrate an alcoholic solution of lead-acetate was added drop by drop, as long as a colourless precipitate was formed. After this had been removed by filtration, the filtrate was evaporated to a small bulk, and poured into five times its volume of dilute hydrochloric acid. A viscous, yellow precipitate was thus obtained, which increased in quantity on standing; this was collected upon calico, then first rinsed with cold water, and afterwards digested with boiling water. The turbid yellow liquid thus obtained contained resinous matter in suspension, but this was readily removed by means of ether. After boiling the clear aqueous solution excess of hydrochloric acid was added, and, on cooling, it deposited long, orange-coloured needles, which were collected and washed with dilute hydrochloric acid. To purify this product, it was dissolved in boiling dilute alkali and the solution digested with animal charcoal, filtered, treated with hydrochloric acid, and allowed to cool; the yellow needles which separated were collected washed, with water, and dried at the ordinary temperature. The product weighed 0·35 gram.

For analysis, this was converted into the plantinochloride in the usual manner, and the resulting amorphous, yellow powder dried at 100°. 0·294 gram, on ignition, yielded 0·0535 platinum =18·19 p.c. The formula $(C_{20} H_{17} NO_4) 2 H_2 Pt Cl_6$, requires Pt=18·02 per cent. The analytical numbers accorded, therefore, with those given by *berberine-platinochloride.* Its identity with this substance was shown by a comparison of the reactions of the hydrochloride above referred to, with berberine hydrochloride obtained from other sources. The inner bark of this root (60 gram.) was found, on examination by the above method, to contain but a trace of berberine, so small, indeed, that this was probably derived from traces of the preceding yellow powder still adhering to it. It contained, however, some quantity of a sticky, resinous product, which was insoluble in water or dilute acids, but readily soluble in ether, and appeared to be identical with the similar substance present in the yellow powder. The quantity obtainable was too small for extended examination, and the preliminary experiments were not successful in extracting from it any crystalline substance. The central woody portion of the root yielded no berberine.

We have already heard a good deal of the insecticidal properties of adhatoda vasica known in Sinhalese as adhatoda and agaladara. A quantity of dried leaves of the shrub from the Imperial Institute collections was sent at the suggestion of Dr. Lander Brunton to Professor Giacosa of the University of Turin for examination.

Professor Giacosa reports that by following the method of examination described by Mr. Hooper in the *Pharmaceutical Journal* for April, 1888, he has been unable to discover any alkaloid in the leaves, but that these are especially rich in potassium nitrate. Dr. Watt, the Reporter on Economic Products to the Government of India, suggests that the unsatisfactory results obtained from expeiments on dried leaves in Europe, may be due either to the fact that (1) the active properties possessed by the leaves in the fresh state are in some measure, if not wholly, lost when they are dried; or that (2) there are certain periods in the growth of the plant, or certain seasons of the year, when the alkaloid is present.

An investigation as to (1) can only be carried out on the fresh leaves in a laboratory in India, while a careful collection of the leaves of the *Adhatoda* at different seasons would be necessary to afford material to finally clear up the points raised by (2). As there seems no doubt from the experiments carried on tea estates, that the fresh leaves possess insecticide properties, further experiment on the nature of the substance which gives the leaves these properties may furnish interesting information.

VINES AND LINE SUPPORTS.

(Communicated.)

The news that grape vines are found to thrive by the side of *Erythrinas* in Bombay, and that the cultivation is a simple affair would justify similar experiments being made in Ceylon with a view to the cultivation of grape in an extended scale.

In Jaffna it is become the fashion to have a grape vine in every compound, but beyond imitating an existing fashion and contributing a luscious fruit to the table, no attempt has been made by the comfortable and easy-going folk in the peninsula to extend its cultivation as an industry. And this may be due to the fact that there its cultivation is by no means an easy affair. Besides, the vines are permitted to cover a large area of ground over pandals, and one large vine well attended to and manured is amply sufficient to satisfy the demands of the grower. How well single vines can be made to bear has been illustrated in the well-known vine at Hampton Court. And this fashion set in Jaffna has been the method which has obtained in Ceylon all along wherever a vine was grown, whether in Kandy or Colombo, or Dumbara or Wahacotte.

The report of Mr. Hoole in the June number of the Magazine on Viticulture in India, at least in the vineyard referred to by him, affords a suggestion for extended experiments on the lines indicated by him. It may be that the *Erythrina* does supply nitrogen in quantity to satisfy the limited wants of a grape vine checked in its growth and dwarfed to the limits of the umbrage afforded by its host; or it may be that the vine is afforded certain natural and indispensable conditions at the foot of its living host which enables it crop without much artificial management beyond a supply of manure annually.

As regards the theory of nitrogen supplied by the *Erythrina*, while it may be interesting to cocoa planters to have it definitely settled, it may be also interesting to growers of pepper to know that the *Erabadu* and the *Dadap* do not show any better pepper vines on them than any other host from Jack to *Hoorie*, on which I have permitted my pepper to creep. I have found, however, that a live host is better than a dead stump for crop. The conclusion that is forced upon one is that the decaying leaves help to enrich the soil and thus to increase the crop. But there is yet another inference. A growing tree is known to supply itself with a large quantity of water from the ground by means of its roots, and this

constant action upon the soil round about its roots lead to two distinct and beneficial results in regard to the vine, whether pepper oi grape, or any other creeper which may grow at its roots. During the wet season it takes away the excessive moisture which may lead to fungoid growths at the roots of the vines, and in the dry season it may without artificial aid, such as root pruning, bring about naturally and from the dryness of the soil the inspissation of sap which is necessary in a tree for the development of blossom and crop. If this is proved, then grape culture in Ceylon will be simplified into a system of superficial pruning and annual manuring.

PLANTER.

CEYLON WOODS.

(Continued from July issue.)

44 Leguminosæ (Papilionaceae).
81 Erythrina indica Erabadu.
82 Dalbergia frondosa.
83 Pongamia glabra. Magul-karanda.
84 Pericopsis mooniana Nedun. (Cæsalpineæ).
85 Poinciana regia.
86 Cassia fistula. Ehela.
87 ,, marginata. Ratu-wa.
88 ,, siamca. Wa Aramana.
89 ,, sp.
90 Dialium ovoideum. Gal-siyambala.
91 Tamarindus indica. Siyambala.
92 Bauhinia racemosa. Mayila. (Mimosæ).
93 Adenanthera pavonia. Madatiya.
94 Dichostrachys cineria. Andara.
95 Acacia planifrons.
96 ,, leucophlea. Maha-andara. Katu-andara.
97 ,, melanoxylon.
98 Albizzia lebbek. Mara.
99 ,, odorotissima. Suriya-mara.
100 ,, stipulata. Kabal-mara. Hulan-mara.
101 Pithecolobium saman (rain-tree.)
45 Rosaceæ.
102 Pygeum wightianum. Unnnu.
50 Rhizophoraceæ.
103 Carallia integerrima. Dawata.
104 ,, calycina. Ubberiya.
105 Weihea zeylanica.
106 Anisophyllea zeylanica. Weli-penna.
51 Combretaceæ.
107 Terminalia belerica. Bulu.
108 ,, parviflora. Hunpalanda.
109 ,, glabra. Kumbuk.
110 Gyrocarpus Jacquini. Hima.
52 Myrtaceæ.
111 Eugenia aquea. Wal-jambu.
112 ,, gardneri.
113 ,, revoluta.
114 ,, assimilis.
115 ,, calophyllifolia.
116 ,, operculata. Bata-komba, Kobo-mal.
117 ,, jambolana. Maha-dan.
118 ,, brachteata. Tembiliya.
119 ,, mooniana. Pinibaru.
120 Barringtonia acutangula. Ela-midella.
121 Careya arborea. Kahata (Patana oak).
122 Eucalyptus globulus.
53 Melastomaceæ.
123 Memecylon capitellatum. Dodankaha. Weli-kaha.
54 Lythraceæ.
124 Lagerstrœmia flos-reginæ. Muruta.
125 Axinandra zeylanica. Kekiriwara.

RAINFALL TAKEN AT THE SCHOOL OF AGRICULTURE DURING AUGUST, 1895.

1 ..	Nil	13 ..	·22	25 ..	Nil
2 ..	Nil	14 ..	Nil	26 ..	Nil
3 ..	Nil	15 ..	Nil	27 ..	Nil
4 ..	·03	16 ..	·11	28 ..	·08
5 ..	Nil	17 ..	Nil	29 ..	·02
6 ..	·07	18 ..	·07	30 ..	Nil
7 ..	·03	19 ..	·23	31 ..	Nil
8 ..	·01	20 ..	·03	1 ..	·02
9 ..	·12	21 ..	Nil		
10 ..	Nil	22 ..	Nil	Total ..	1·29
11 ..	Nil	23 ..	·15		
12 ..	·07	24 ..	·03	Mean ..	·04

Greatest amount of rainfall in any 24 hours on the 19th instant, ·23 inches.

Recorded by W. O. Rowlands.

GENERAL ITEMS.

The Kew authorities and our local Entomologist would appear to be at some variance inregard to the new pest, *Orthezia insignis* vel. *nacrea.* Mr. Green in his paper on the subject stated that "there is little doubt but that we owe the introduction of this pest to plants received from Kew," . . . "where it is now said to be doing an enormous amount of damage." In the June-July number of the *Kew Bulletin,* reference is made to this report in the Miscellaneous Notes, where we read, "It is undoubtedly possible that the *Orthezia* may have reached Ceylon by way of Kew. It is not, however. very probable, and the reverse may just as well have been the case. It exists in the public exhibitions, however, from which plants are not drawn for exportation. The plants in the propagating houses from which distribution is made are kept scrupulously clean, and every precaution is taken to send them out free from taint of any sort or kind....Mr. Green's statement as to the enormous amount of damage in the plant-houses caused by the insect, is very much exaggerated,....... as far as Kew is concerned, the *Orthezia* is rather a scienitific curiosity than a troublesome pest."

Owners of fruit trees who suffer from the ravages of the flying-fox might try this preventive, which is said to have been used in New South Wales wtth good effect:—"The alleged remedy is to dip strips of rag in hot melted sulphur, and hang them in the fruit trees. The idea was borrowed from an experiment in England where sulphur was used to keep off weasels and other vermin from destroying pheasants, partridges, etc., and it was thought that sulphur might have some effect on flying-foxes in keeping them off fruit trees. The remedy is simple enough, and an experiment on a small scale would be a trifling undertaking for the poorest fruit-grower."

Mr. Hugh McMillan, who has been appointed head Gardener of the Royal Botanical Gardens, Peradeniya is comes from Kew, where he entered the Royal Gardens in 1893, having been previously in charge of gardens in Wales. The *Kew Bulletin* notices two other Colonial appointments from Kew, viz, Mr. Charles Henry Humphries to the Gold Coast botanical station

in succession to Mr. William Crowther, and Mr. John Chisnall Moore to the botanical station at St. Lucia.

The *Scientific American* recommends the following treatment for destroying stumps of trees:—In the autumn bore a hole in the centre of the stump about 18 inches deep, and 1 to 1½ inches in diameter. Put in about 2 oz. of saltpetre and fill the hole with water; plug it up tight. In the following spring take out the plug, pour in 8 or 10 oz. kerosine, ignite, and the stump will smoulder, but not blaze, to the extremities of the roots, leaving only ashes.

A new method of preserving oranges has been discovered. The plan of burying oranges with three or four inches deep of soil above them is a decided advance in simplicity on the ordinary methods of keeping this favourite fruit. The inventor of this method is Mr. John Carson, of Clutha, Kew, whose reputation as an experienced grower of fruits is a guarantee of the efficiency of the new plan. The spot chosen for the experiment was on the shady side of a tall pine tree, to which the sun had access only for a time after rising. The oranges were buried as described on September 25, 1894, and they were lifted on Tuesday, April 9. They were quite ripe and perfectly sound and sweet when submitted to examination.

One of the unconsidered trifles that the Mikado has picked up as the result of the Chinese war is the monopoly of camphor. That drug is produced only in Japan and Formosa; and, though a variety known as Borneo camphor is obtained from Borneo and Sumatra, it cannot compete with the product of the evergreen laurel of the Eastern Asiatic islands. Inasmuch as camphor, apart from its many and varied therapeutic uses, is an essential ingredient in the composition of nearly all the new explosives, the demand for it is very large. The Japanese are well aware of the valuable monopoly they have blundered upon rather than sought, and have already begun to limit the export by imposing duties. As a natural consequence, the price of the drug has risen rapidly since the war came to an end, and bids fair to rise higher. Happily the commercial instinct of the Japanese statesmen is as sound as their political instinct, and they are not likely to abuse the monopoly they have acquired by forcing the price up to prohibitive rates. The chief concern of the Japanese Government will, for some time to come, be the finding of money to pay for the ships and munitions of war which will secure the Mikado in the possession of the spoils he has already won. Properly handled and wisely administered, camphor should prove a valuable source of revenue, and contribute a handsome quota towards the cost of the military preparations which pertain to the peace of the Dragon Kingdom.—*Indian Agriculturist.*

Mr. James Peter, of Berkeley, Gloucestershire, writes:—"I have received many inquiries asking for information regarding the use of carbolic acid as a preventive of abortion; and to save myself the necessity of answering so many letters, I give you the following particulars of the system I adopt:—'Commence by mixing with sufficient hot water to make a bran mash, ¼ oz. ordinary crude carbolic acid, then add the bran, gradually increasing the carbolic acid up to ½ oz., which is the maximum quantity I can get a cow to take in a bran mash. For a number of cows I measure out the requisite number of ½ oz. doses, and mix with the water and bran in a fodder barrow, and then give a good broad shovelful to each animal. Before I got rid of the disease I administered the carbolic mashes three times a week. I find it equally safe to give an animal a ½ oz. dose daily.' I may state that I have regularly used carbolic acid in this herd for the last three years as a preventive against bacterial diseases, and in all my experience I never had animals keep so healthy and well as they have since I have done so. My opinion is that its use internally is a valuable remedy and a preventive against microbic diseases. The Royal Agricultural Society has asked me to revise my evidence before their Abortion Commission, owing to the numerous inquiries for copies of the evidence, and I understand they are now about to publish it in pamphlet form. I hope to make further experiments in another form."—*Mark Lane Express.*

Says the *Agricultural Journal of New South Wales*:—It is satisfactory to be able to report that, according to notifications received by the Department, the various remedies recommended have been most successful. No less than fourteen fruit-growers, whose addresses cover a very large portion of the Colony, have been able to clear their vines of black spot and oidium. From four different districts complete success has followed the use of bandages for codlin moth. Resin and soda wash has proved efficacious for woolly aphis, while Bordeaux mixture, in addition to its good results in black spot, has also proved beneficial for removing pear scab, shot-hole fungus and apple-scab. Spraying with Paris green has given good results for codlin moth and caterpillars in potatoes. There is one reported failure from East Orange, where Bordeaux mixture failed to cure twig blight and powdery mildew. It must not be supposed that the cases here referred to cover all the orchards and vineyards of the Colony, as doubtless there are many trials which do not get reported, and what is still more to be regretted, there are many cases of disease where no attempt is made to effect a cure. It is hoped that the publication of the successful results will act as a stimulus to those who come within both the classes last referred to.

The English "Wild Birds' Protection Act 1894" supplies a list of wild birds to be protected, but other birds may on the recommendation of a County Council be added. Mr. Cecil Warpburton of the Zoological Laboratory, Cambridge, has done good service in preparing a complete schedule of wild birds "undoubtedly beneficial to agriculture, and which in the interests of agriculture it is very desirable should be protected under the act referred to." The schedule consists of four columns headed respectively "bird," "food," "pest," "eggs." For instance, *Bird*, the wren (*Troglodytes parvulus*); *Food*, insects, *Nest*; dome-shaped, with side entrances—*Eggs*, 6-12, white generally spotted with red at larger end, ·67 × ·5, April—June. A schedule prepared after this plan should prove use in every country.